MODEL AIRPLANE NEWS

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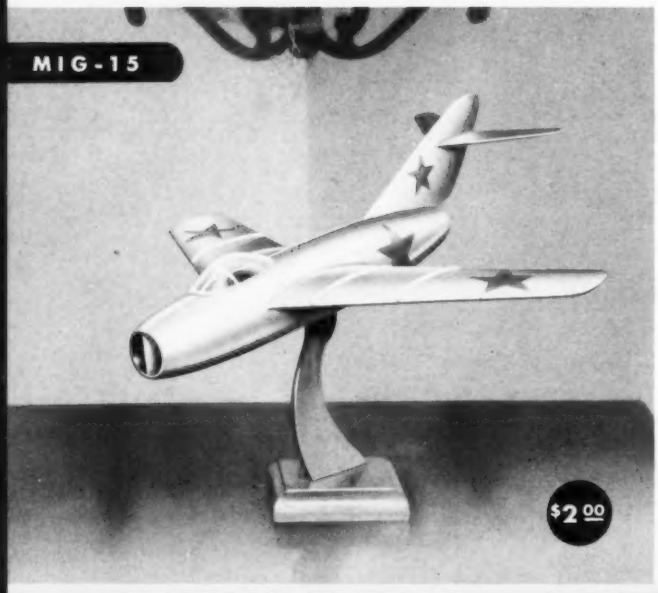

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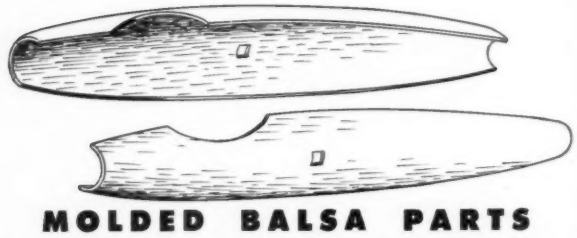
F-86 Sabre Jet	17″	19″
MIG-15	15-3/4″	16-1/4″



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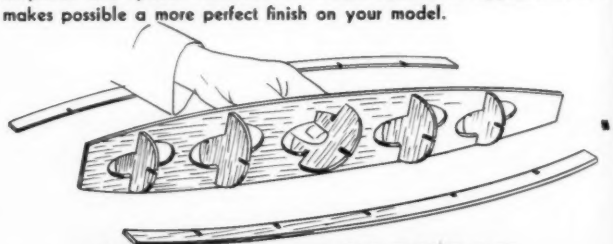

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Note how formers fit securely into place in the keel section with the simple slot-slide action of a key turning in a lock. This exclusive construction technique (patents pending) insures positive location and correct alignment of parts . . . gives your model greater strength . . . saves you building time and work.

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by William Winter

MODEL AIRPLANE NEWS

Serving Aviation 23 Years

NOVEMBER, 1951 VOL. XLV — NO. 5

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Published monthly by Air Age, Inc., 1140 East West Highway, Silver Spring, Maryland. Editorial and Advertising offices: 551 Fifth Ave., New York 17, N. Y. Jay P. Cleveland, President and Treasurer; Y. F. Johnson, Vice Pres.; G. E. Johnson, Sec. Entered as second class matter Feb. 1951 at the post office at Silver Spring, Md., under the act of March 3, 1879. Additional entry at New York, N. Y. Price 25c per copy in U. S. Subscription Rates — Within U. S. only: 1 yr. $2.50; 2 yrs. $4.75. In Canada: 1 yr. $3; 2 yrs. $5.75. All other parts of the world: 1 yr. $3.50; 2 yrs. $6.75. Change of Address — Send to MODEL AIRPLANE NEWS, Subscription Department, 551 Fifth Avenue, New York 17, New York, at least one month before the date of the issue with which it is to take effect. Send old address with the new, enclosing if possible your address label or copy. The Post Office will not forward copies unless you provide extra postage. Duplicate issues cannot be sent.

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The sketch you see above is an art director's idea of what an editor does for a living. What the "A. D." doesn't know is that this sort of thing goes on seven days a week, especially weekends when, conscious of M.A.N. traditions that one must practice what one preaches, we get that wild look in our eyes and head for the flying field. This affords a chance to think about such things as letters, one half of which say, "Give us more free flight," and the other half, "Give us more control line." On Mondays, we return, carefree, only to have the publisher ask, "What happened to you?"

For 14 straight Saturdays, met Val Luce, Pete Andrews and Johnny Zaic at the old Curtiss airport. (Each week the place shrinks by one row of new houses.) Pete and Johnny have been running a race in thin wings. Johnny is down to 1/4 inch ribs on a 160 square inch, *.049 Torp* job. Both go in for low pylons. A screaming shallow angle climb puts these ships so high they would be lost on two out of three flights except for the dethermalizers.

Concentrating on glide with a thick rib section—Clark Y top, RAF 32 bottom, a la Wally Simmers—we snagged a thermal 25 feet off the runway. Did our dethermalizer pop? No sir! This job was a try at a small A-AA combination Wasp or Anderson .065. That .065 is one of the best starting mills it has been our pleasure to try. You can flood the daylights out of that .065 and still start it easily.

A few months back M.A.N. said that some F.A.I. events and rules are so outmoded that in many aspects the F.A.I. competition is pointless. Reference was made to the Russians who set records behind that iron curtain. H. R. Gillman, the director general, advised Russ Nichols, AMA, of F.A.I.'s reactions to M.A.N.'s comments.

"My first comment is regarding the Model Records set up in Russia," said Mr. Gillman, an Englishman. "The whole of aviation is sponsored by the government and model aviation has its share in this government's support, therefore it is not surprising that there should be a very large amount of model flying in Russia and it is not surprising that this model flying should lead to the creation of records.

"The Central Aero Club of Russia is a member of this Federation and has been a member for years. This being so, if the Central Aero Club of Russia submits the required documents in support of a model record and if the facts, as stated in the documents, support the claim for the record, this claim must be accepted by the Federation in the same way as similar claims, if substantiated, must be accepted for certification form any other Club member of the F.A.I. It is not for the F.A.I. to question the reasons for enthusiasm in establishing records, on the contrary, the Federation must applaud such enthusiasm.

"It is up to the model enthusiasts in America, through the N.A.A., to put us right and to tell us where they think we have gone wrong," continues Gillman, speaking of M.A.N.'s charge that rules are obsolete. "Perhaps we are not so out of date as you suggest but we are only too willing to learn and have the advice of those who know more than we do." That was nicely put.

Put together an *Aerotrol* kit. For a frustrated plumber the results were startling. Not only did it work right off the bat but did a 900 feet ground check off the end of the antenna. Asked Bill Effinger, Berkeley's major domo, out to see us fly. With which, the receiver antenna came loose after takeoff and detuned the set. Who found the model? Effinger. First time in history anyone made a manufacturer chase an out-of-sight. The next flight spiraled in due to another boner. Said Bill when we phoned that night that the ship had flown perfectly later, "And did you keep it on the field?"

This 5-1/2 foot job has a glow K & B .24 turning a 12-5 prop. Substituted a Torp .29 (the old one) and the ship headed aloft at the angle your arm makes when you salute the flag. Touched rudder and the ship did a half snap roll, followed by a wild split S. Back to the .24! Be advised that a .19 on a six-foot job is plenty.

(*Continued on page 4*)

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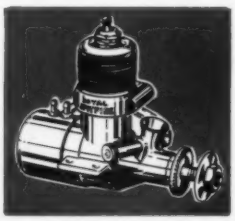

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M.A.N. At Work

(*Continued from page 1*)

▸ Pete Andrews has what is said to be the hottest Wasp in America. Turns 16,000 plus with the prop Pete uses to fly. Turn the prop against compression and, as it goes by, it hits another compression point. What's that compression, we asked Pete. Case compression! We wouldn't know. None of our three dozen at home felt that way.

▸ Met Carl Goldberg at the Screamin Demons contest in Hicksville, L. I. He flew his *Cumulus* while at the meet. Discussed the dangers of hot free flight. Carl has always been opposed to the low power loadings—or high power to weight ratio. "Power loadings should be at least 200 ounces per cubic inch," said Carl. "That means my *Cumulus* would have an *.09*, not an 19." That, we submit, would be a nice airplane. It could still hook thermals. Guys would have to make better airplanes to win contests. Kids would fly with less discouragement. Two hundred ounces is nothing to scream about.

▸ *Sunday last went out to the Hicksville model flying field. Gorgeous day. Sunshine and stuff. Flew by our lonesome. Just set to tee off here on New York modelers who lack the spirit to fly, when the phone jingled.*

"Where were you Sunday?" asked Bob Hatschek . . . What do you mean, we came right back, didn't see anyone. "Can't you read," sez he. "Signs all over the place. Contest was a couple of fields down the road." Come to think of it, we did hear a mysterious engine, once.

▸ Had a real "hangar-flying" session with Joe Dale. Joe is the "D" of the "D-E" team responsible for the fuel-cut-off, and so on. He is a rabid Diesel fan and has about 100 of these engines from all over the world. Uses a mixture of one part kerosene, one part ordinary ether, one part Bakers' AA castor oil. These engines have far more power than American builders realize. Joe had us starting a Mills with a flip or two before we were done. Since this was at 1:30 in the morning, we suspect the neighbors are well broken in.

▸ And as we write comes the sad news of the demise of Paul Guillow, of Wakefield, Mass., as honorable and fair-minded man you could want to meet. In his ideas, his policies and, what is most obvious to us modelers, his top grade kits, Paul always gave a fair shake. For many years Paul was a prime mover in the model business. His native New England inventiveness produced many unusual and worthwhile ideas. Paul was the kind of man who believed in giving talent a break and went out of his way to encourage ability. The industry could ill afford to lose him.

20 YEARS AGO

Everybody wanted to get into aviation 20 years ago. The November 1931 M.A.N. bore down on technical articles, such as *The Latest in Flying Windmills, Modern Science Balks the Elements, Win a Free Flying Course.* November '31 was the 28th issue of M.A.N. The November 1951 issue is the 269th. M.A.N. is the oldest consecutively published model airplane magazine. No other magazine can make this statement!

The great World War I boom in models was just coming to an end. For five years, Fokkers, Spads, et al, had been built by the hundreds of thousands. The Fokker *Tripe* and Sopwith *Camel* were presented that November in three-view form, a far cry from the fabulous Joe Nieto drawings of today.

What did they build 20 years ago? The gas engine was still a year away. Most probably, Maxwell Bassett and Bill Brown even then had one of the magic powerplants running on the bench. But rubber was everything. Pictures showed that the twin pusher still was contest kingpin. A Heath *Baby Bullet* featured that issue. Wing tips, stabilizer and fin outlines were split bamboo, as were the stringers. Wonder how many of today's readers remember bending bamboo over a candle flame? Flying scale models were popular. Especially lightplanes. Professor T. N. de Bobrovsky authored a six-page plan of the Curtiss *Junior*, a cute overhead-engine pusher of the day. Such flying scale jobs had a motorstick, a heavy piece of timber with a hook on one end and a thrust bearing or "prop hangar" on the other.

There were famous names in the advertising columns, too. Scientific used a page of fine type to advise modelers of their supplies—everything from soup to nuts. One-eighth square strips were six for a nickel; 1/4 squares, six for a dime. A sheet of 1/16 x 2" was a mere six cents. Oh, for the good old days! Ideal, Cleveland, Comet were present, the latter just starting out with a 12" flier called the *Dipper*. Cleveland, famous then as now for scale, had a new series of profiles with rubber motors in a cut-out slot. Spanning about three feet, they sold for $2.20.

So you think prices have gone up! One manufacturer featured a line of popular 12" scale model kits which sold for $1.10 per. By today's standards that would make a *Speedee-Bilt, Quicky,* or *Jig-Time* kit worth at least $5.

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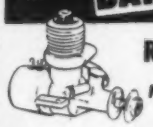

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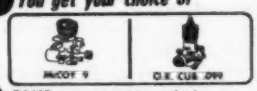

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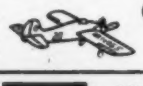

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GLENDALE 1 • CALIFORNIA

▸ We took in Plymouth's banquet that was held for the Southern California contingent of eliminations winners held at the Colonial Room of the Ambassador Hotel in Los Angeles.** Bob Sommerville of the home office gave us this brief rundown on how Plymouth came to sponsor model plane contests. Some five years ago, the Aero Club of Michigan asked the Plymouth Division to sponsor a big annual contest. The club had well mapped plans and sold the idea to the mofor car people on an experimental basis. At first thinking it might seem odd for an automobile manufacturer to sponsor model airplanes; Plymouth finally decided that promoting good sportsmanship and furthering the development of a swell hobby was a worthy undertaking and so the 1st Internationals took place.

The contest clicked. Everything ran smoothly in spite of the magnitude of such an effort. On the last day of flying the contest ended at 5:30 p.m., and at 7:30 p.m. the same day, results of the whole meet were posted in the Detroit hotels where the contestants were guests. The victory banquet and presentations to winners along with the entertainment was bigger and better than any of us entrants had ever expected. This was just the 1st Internationals of '46. Since then, the Plymouth Motor Corporation has gone on to promote the sport and hobby all over the United States and the world. This year they sponsored over 200 meets throughout the United States in which over 22,000 youngsters competed. P.A.L. Clubs (Plymouth Aviation League) are springing up rapidly throughout the country. In Cincinnati more than 30 clubs are being sponsored. In Texas more than 14 sprung up in the past few months and more than 60 are expected to materialize in the near future. These clubs are helped along by the dealers in the communities as they turn the facilities of their agencies over to the modelers at least once a week and furnish excellent instruction classes as well.

* * *

The versatile AA engine has added another feather in its cap. Flying scale jobs powered by the mighty mites are the latest sensation. The Inglewood Flightmasters sponsored a terrific and well received meet in August. Judges were members of the Historical Society of the Institute of Aeronautical Sciences. The duties were well carried out by George Lawlor, "Dusty" Carter, and oldtimer Joe Weathers. Nothing escaped the eyes of these very capable men. We were slightly amazed at the precise workmanship and flying qualities of the pint-sized beauties. It usually is assumed that the larger ships are more easily detailed. Assumptions such as these were tossed aside when we feasted our orbs on the scale details of the interiors. Upholstered seats, scale dash panels, and many other exact details showed up in most of the models.

A simple set of clearly defined rules governed the event and not a gripe was heard. Scale points were awarded according to the following point system: Points awarded for fidelity to scale and workmanship—proportions, structure, details, engine and cowl, cabin-cockpit interior, finish and covering, and marking-color trim. Maximum total scale points—700. The flight rules were very simple also—1. Five minute limit on flights, no limit on engine run; 2. Model must make an official flight of at least ten seconds to qualify; 3. Three official flights permitted, *number of attempts unlimited*; 4. Official flight with highest ratio of flight time to engine run is scored; 5. Highest ratio in contest awarded 300 points, all others in proportion. The general rules followed the same simplicity: 1. Contest limited to flying scale models

Cullers' seven oz. *Ercoupe, Torp. 035.* All these jobs fly well, do take-off perfectly.

powered by one or more AA engines; 2. Models must be flown as judged; 3. Twenty points deducted from total score if plans were not supplied; 4. Method of launching optional, fifty points awarded for unassisted take-off. The master scoring plan was as follows: Scale points—700, flight points —300. R.O.G. bonus 50 points.

Louis Culler was hard pressed but took first place hardware with a Berkeley Piper *Super Cruiser*. This little dream ship had everything. Details were unbelievable and the flying characteristics were perfect. In spite of the wind that came up Culler's *Cruiser* r.o.g.'d, climbed perfectly, and had a very flat stable glide. This model was flown right off the board with few minor adjustments, powered with a *Wasp .049*. Louis had fortified himself with another detailed scale sharpy, a Cleveland *Ercoupe*. This model was hotter than the proverbial pistol. The *Torp .035* more than wrung it out after a smooth take-off. Walt Mooney went way back and came up with a Bleriot *IV* to take second money. Walt's ship looked just like it had flown the English Channel. The dummy engine was scaled to the last detail as was the internal construction. The deep cambered section paid off in flying time and it looked as if a thermal were going to put it on the lost list. Mooney was very close to Culler in total points (four points) when his engine cracked a shaft. Who took an engine over and loaned it for the final flights? You're right—Louis Culler! Competition was very close throughout the meet. Any scale competition is tough with modelers like Culler, Ced Galloway, Frank Estrada, third place winner with a 1941 *T'Craft*, Ken Aymar, and many other top notchers.

Most of the ships weighed between six and seven ounces with the exception of Aymar's ten-ounce *Mustang*. This ship was scale even to the sliding canopy and aluminum foil covering. We had often wondered which was the best way to use this type of foil to best advantage. Ken tells us he used ordinary nitrate dope to get the initial covering taut and then applied the foil in sections over the last coat of dope. A metal rod similar to a burnishing tool was used to smooth out the finished product. It was necessary to work very quickly once the aluminum covering was started as drying out of the undercoating would spoil the bond and cause wrinkling.

* * *

The F.A.S.T. Club is going to extend the team racing engine displacement rules to include any engine from .18 to .40 cubic inches. This is being tried to find out just how well the .19's, .35's, and .36's will compete with the 29's. Tests so far indicate that the larger displacement engines will fly a little faster but make considerably fewer laps per each tankful of fuel. Likewise, the .19 engines will go further but at a lower speed. It is thought by extending the engine class that team racing will attract more models and yet not give any one size of engine any particular advantage in the forthcoming contests. Team racing is one event where the hot ship doesn't mean much if too many laps are cranked off on the ground. We've seen a lot of the 90-100 mph jobs practically left at the post by the very consistent 50-60 mph jobs.

Many requests from clubs and manufacturers pertaining to an AA Team Racing event brought forth a bunch of experimenting by the F.A.S.T. Club. They built many models ranging in size from 25 to 150 square inches, and from four to eleven ounces. The final size selected (150 sq. in. at approximately 11 oz.) gave good speed and flight characteristics so necessary for real team flying in a small circle. Les McBrayer's AA job, which he recently exhibited (*Continued on page* 00)

Spitfire-powered Taylorcraft from old M.A.N. by Frank Estradas. Its weight is 6-3/4 ozs.

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Supplies fuel under pressure in any position until tank is dry! Complete with Pressure Fuel Tank.

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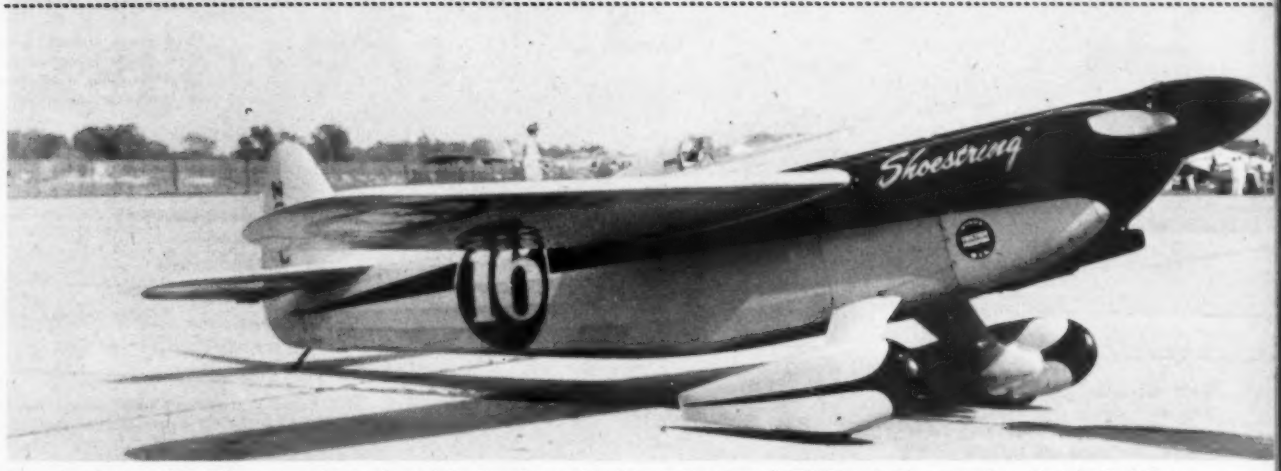


Shoestring, last word in midgets, was the Continental Trophy winner with the very fast time of 197.218 mph. Plane was flown by John Paul Jones.

MIDGETS AT THE RACES

America's premier air racing classic is the Continental Motors Trophy Race, carrying on where Goodyear left off in the encouragement of 190 cu. in. class racers. M.A.N.'s special correspondent at the National Air Races reports.

BY JOHN L. MACKENZIE

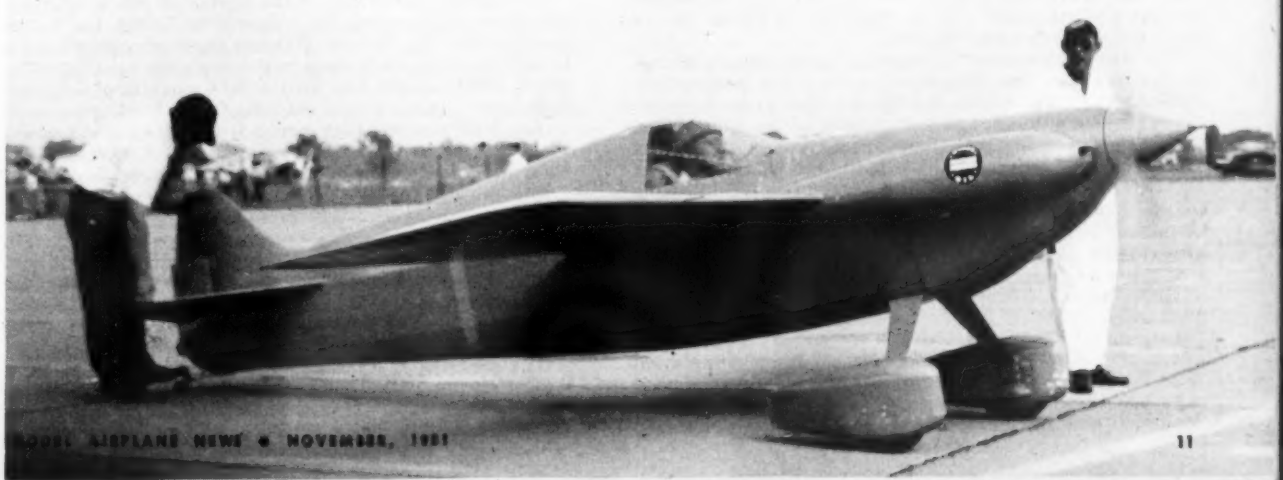
The midget speed planes, which were introduced to the public in the Goodyear race just four years ago, truly came into their own at the National Air Races this summer. For the first time the little jobs had the featured competitive event of the big show which was staged at Detroit's Wayne Major Airport on Saturday and Sunday, August 18th and 19th.

With the passing of the Bendix and Thompson Trophy Races as free-for-all contests and discontinuance of the Goodyear sponsorship of small plane racing, the Continental Motors Trophy Race for the 190 cubic inch class becomes America's premier air racing classic. The Continental was inaugurated at the Miami All American Air Maneuvers in 1948 and repeated there in 1949 and 1950. It was held again in 1950 at the Michigan Air Fair at Willow Run. It has now moved up to the National Air Races and offers the top prize in sporting aviation.

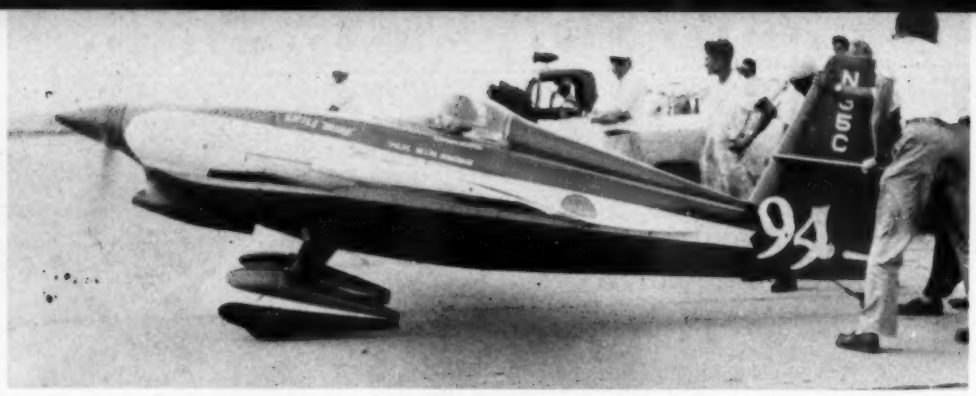
A total of 21 planes competed for the Continental Trophy and $25,000 in cash. Indicative of the progress that has been made in these few years of competition is the fact that the slowest of these planes bettered the fastest time shown in the first Goodyear race of four years ago. The winning time was 20 miles per hour faster than the last Goodyear Race in 1949!

John Paul Jones of Van Nuys, California, who won the trophy at Willow Run last year, successfully repeated his victory with an average speed of 197.218 mph in the final race. Veteran Steve Wittman rounded out 24 years of pylon dusting by placing second at 192.174. Keith Sorenson, the La Crescenta, California boy who has become a major threat in the midget racing game these last few years, scored third at 187.476.

The three preliminary heats of the Continental were run off on Saturday with Jones, Wittman and Sorenson each winning his respective race. Bill Brennand, Bill Falck and Bob Downey placed second in these heats. These six con-

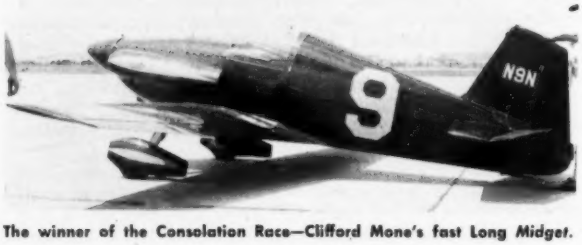


Old master pilot, Steve Wittman, rounded out 24 years of pylon polishing with a credible 192.174 mph in Bonzo. He developed Cessna type gear.



Third place winner, *Little Mike*, Keith Sorenson up, 187.476—notice method of the stabilizer mounting.

Bill Brennand, set to go in fourth place Pitts Special *Monster*. Scimitar type propeller. The plane did 187.053.



The winner of the Consolation Race—Clifford Mone's fast Long *Midget*.

The *PAR Special*, an unorthodox design with a pusher propeller in tail.

testants thus gained starting positions in the Sunday finals, a 15 lap event around the 2-1/2 mile course. The two last placers in each heat were eligible to start in a consolation race on Sunday but three of these withdrew to allow those who failed to qualify for the preliminaries to have a chance at some of the money. Kip Mone of Brunswick, Ohio topped the consolation group with a speed of 177.560 in one of Luther Johnson's Long Midgets.

The tiny planes seem to reach a higher degree of perfection at each succeeding racing meet. It has become evident that no plane reaches the top in its first year of competition. John Paul Jones flew to victory in the *Shoestring*, first appeared in the 1949 Goodyear races. Designed by its owner, Rodney Kriemendahl, it is the last word in midget racers. This ship is typical of a predominate trend in racing plane construction. The wing is covered with a plywood skin while the fuselage is formed with plywood bulkheads and spruce stringers and has fabric covering aft of the cockpit.

Keith Sorenson's ship should be rated the most improved plane of the year. It first appeared at the '48 Goodyear as the all metal *Foss Special* with a top speed of 125.2 miles per hour. Keith turned in a neat 189.857 in his elimination heat. The ship is now owned by Emsco, a California outfit which had five entries in the Continental. Emsco's entries included the three all metal Cosmic Winds formerly raced by Tony Le Vier's group and the Kistler Special. The *Minnow* flown by Bob Downey was the only one of these to reach the finals. It placed last at 185.399. Oddly enough the *Minnow* has been rebuilt to its original configuration after having been radically altered for the '49 Goodyear.

Bill Brennand, having left the employ of Steve Wittman, appeared this year at the controls of Curtis Pitt's new racing plane, the *Monster*. Bill was hard pressed by his beloved *Buster* to win a place in the finals. He beat out Wittman's latest protege, Bob Porter, by a scant .61 of a second. Brennand's losing battle with Sorenson for third money in the final was the high point of the Continental races. The Pitts Special is a shoulder wing design featuring metal wing and fabric fuselage covering.

Bill Falck of Warwick, New York, who has been plugging away at these midget races since they began finally got his *Rivets* in the finals. Falck's job is rather unusual in appearance but it is one of the sturdiest planes on the field and a top notcher in anybody's race. He took fifth place with a speed of 186.595. It is a real credit to a lone wolf like Bill to be able to produce a ship that can outrun the Cosmic Winds, once considered the best in the game.

Although the civilian racing events were of primary interest to the enthusiasts of the sport, they actually occupied only a small part of the great air carnival that was staged at Detroit. Their performance was overshadowed

Bill Falck's *Rivets* had distinctive cowl, landing gear installation, which attached to wing. 186.595.

Noted *Cosmic Wind Minnow*, Don Downey up, took sixth position with 185.399. Times were very close in this race.

Skeeter, Jimmy Kistler's racer, boasted unusually pretty lines. Well done.

The *Mirage*, Leighnor Special, with its hinged canopy swung wide open.

by the vast demonstrations of power by the military air services. The Air Force in particular put on the most spectacular display of air power that has ever been revealed to the public. Practically every service type of airplane was included in both ground exhibition and flight demonstration.

The Bendix and Thompson Trophy awards were included in the Air Force program. The Bendix Trophy went to Col. Keith Compton of Elgin Field, Florida, who flew an *F-86* the 1919 miles from Muroc, California to Detroit in 3 hours, 27 minutes and 56 seconds. This time represents a speed of 553.761 mph, a new Bendix record. Col. Compton refueled at Denver and Omaha and still beat out a group of *F-84's* and *B-45's* which flew the route nonstop.

Col. Fred Ascani of Edwards Air Force Base at Muroc was awarded the Thompson Trophy for hanging up a new world's record around the 100 kilometer closed course. His official Thompson time on Sunday was 628.698 mph, but he is actually credited with the record of 635.411 which he set in an officially timed trial run on the preceding Friday. Col. Ascani flew a stock model *F-86-E* with full military equipment in his race against time.

The Allison Trophy was awarded to Lt. William Baisley of Austin, Texas, who led three *F-84's* in a race to Indianapolis and back at a speed of 580.512 miles per hour. The fastest official time at the races was scored by Capt. F. C. Blesse in a special *F-86* race from Chicago. He averaged 672.189!

The Air Force demonstration also included the daring routine of the Acrojets and the flight of an *F-86* through the sonic barrier. The latter stunt was the most astounding of the show. Diving from 40,000 feet altitude the Sabre fighter passed Mach 1 in its pullout. The resultant thunderclap of shock waves gave all the sound and reverberations of a 500 lb. bomb exploding!

The Naval Air Service, the Marines and the Army's own separate air service put on shows of lesser magnitude but of equal perfection. Canada's *Vampire* jet team was on hand again to demonstrate its own particular abilities also.

Sandwiched in between these mighty acts were the graceful aerobatics of our best civilian performers, Caro Bayley, Rodney Jocelyn, Bevo Howard and the Cole brothers. Dave Binns was there too with his bit of comedy.

A Powder Puff Derby from Los Angeles to Detroit was another revival. Prizes were distributed according to a scoring system based on the guaranteed speeds of the respective airplanes used by the ladies in this cross country flight. Miss Clare McMillan and Mrs. Frances Bera, Californians, co-piloted to victory in that event.

Not to be overlooked was that excellent bit of stunt, speed and pursuit flying put on by the model builders of Detroit each morning of the show.

PLANES in the news

When the Army got tired waiting for the Air Force to develop armed liaison craft, they made tests, held competition for types like this Temco.

by DAVID ANDERTON

Reputed to be faster than Mig or Sabre, Hawker *P-1067*, has been ordered in quantity by RAF.

Beautiful lines of the Hawker emphasize its speed. Powerplant is 7,000 lbs. thrust *Avon*.

The *Demon*, McDonnell's *F3H* for Navy, equipped with a 9,000 lbs. thrust Westinghouse *J-40*.

▸ Biggest news of the month is the announcement of McDonnell's latest fighter for the Navy, the *F3H Demon*. Swept-winged and needle-nosed, the *F3H* made its first flight from home base —Lambert St. Louis airport—rather than going out to Edwards AFB, Muroc, traditional take-off ground for recent service jets.

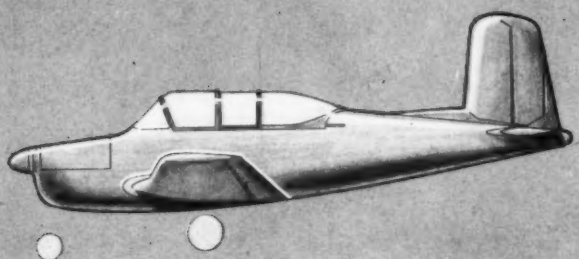
Powerplant for the *Demon* is a single Westinghouse *J-40* turbojet, which has been variously reported to have thrust ratings up to and including 9,000 lb. Only photo released of the *Demon* shows it to be on the general lines of McDonnell's *XF-88 Voodoo*. Wings and tail surfaces have about the same amount of sweep, and the fuselage after portion resembles the *XF-88's* in some respects. Twin air inlets feed the *J-40;* they are located in the fuselage belly ahead of the leading edge of the wings, and are of the flush type. They also appear small. The plane has tricycle landing gear, and in addition, bumpers—looking like old-fashioned tail skids—are attached to the wingtips.

The *Demon* is one of a collection of radical new jet fighters which have been developed recently for the U. S. Navy. Starting with the Chance Vought *F7U*, now a production reality, and passing to the Douglas *F4D* (presented in May 1951 MAN) and the *F3H Demon*, the next step should be the Grumman *XF10F-1*, giant variable-sweep fighter. And wait until you see that one!

In Korea a couple of months back, an ancient, beat-up Red Chinese plane ruined a large amount of U. N. materiel. It did its job in the face of opposition from our jets and piston-engined jobs, and was finally (*Continued on page* 52)

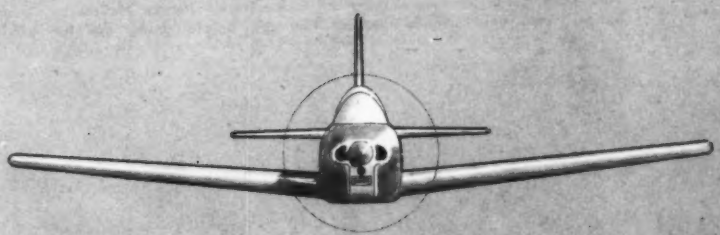
From armed liaison craft to hottest, fastest fighters ever designed, here's the latest dope.

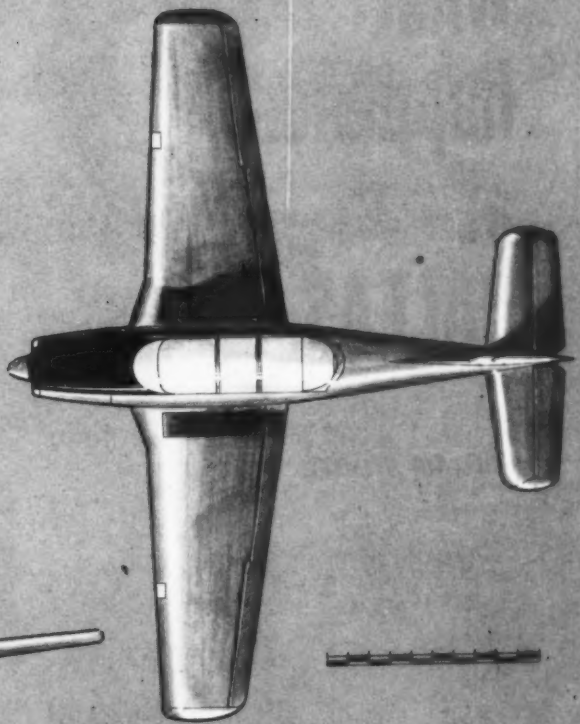
Beech T-34



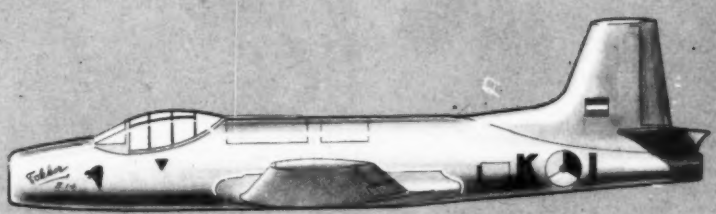
Beechcraft

T-34





Fokker S. 14



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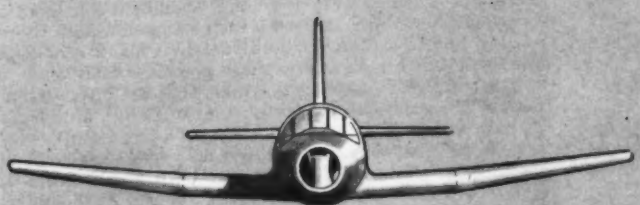
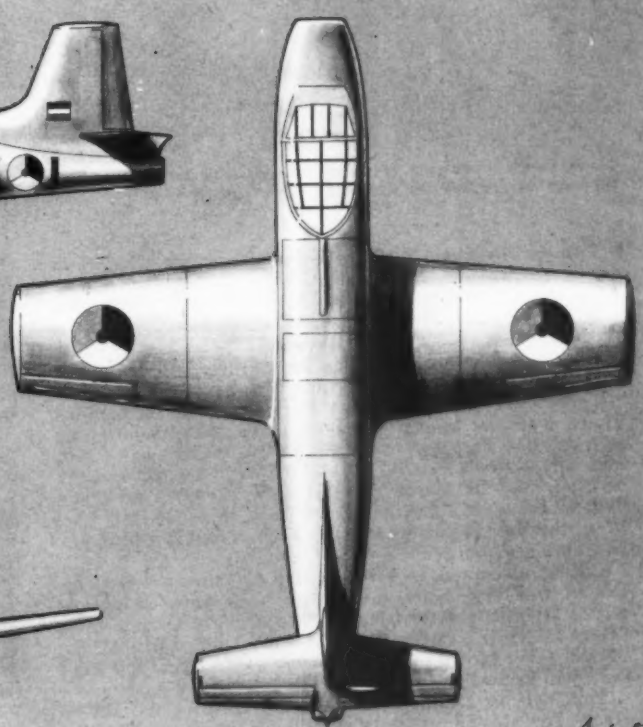




what happened at DALLAS ?

by

WILLIAM WINTER

This year the juniors were sharp as tacks. Here's Jimmie McCroskey, Iredell, Texas, scale ukie winner, making test run before going out for official.

Control switch in left hand, Bill Butler watches his rc model. Bill looks relaxed but that ship of his really tears around.

Tom Stark releases towliner for another builder. Towline gliders become more popular with each passing Nationals. Takes bit of special technique, too.

Twenty Nationals doesn't sound like much when you say it quickly but how many Nationals can you name? After the old AMLA—Airplane Model League of America—folded, this magazine sponsored the first of the modern Nationals, the 1933 meet at Roosevelt Field, Long Island, where Maxwell Bassett for the second time beat the pants off the boys with his gas engine. And in between?

There were two at Dallas and the same at Olathe, Kansas. There was one apiece at Minneapolis and Wichita, the latter in the first post war year of 1946. Chicago in 1941 and 1940, Detroit in 1939, 1938, 1937. Was it Detroit in 1936, or St. Louis? Or Akron? See what we mean? This year's "big meet" wasn't bad which, come to think of it, is true of all the Navy sponsored deals. Wichita and Minneapolis! Need we say more?

Dallas, of course, is a rough trip for almost everyone. Dallas was also hot—oh, brother!—but then, whatever city is selected always breaks all records for a heat wave. "Hasn't been this hot in 89 years, can't understand it." Or, "it has never blown like this before—we're out of the wind belt, you know."

The 20th, or Dallas Nationals, was held at the Dallas Naval Air Station, actually at Grand Prairie, on the road between Dallas and nearby Fort Worth. Although the entry list was off a couple of hundred—due mostly to the mid-western floods—the various air conditioned motor courts were swamped as usual by the more affluent modelers who held all night bull and repair sessions. The bulk of the contestants took the Texas heat in stride, eating and sleeping on the Naval base. Both the Navy and the Dallas Exchange Club did a top-notch job, and that isn't just being polite.

Airplane-wise there was little new this year. The only thing out of place were two long Wakefield jobs by Hank Cole and Joe Bilgri, each of which snagged a first, thereby adding fuel to this winter's bull sessions about how to beat the Swedes. Free flight was more pointless than usual, due to the king size morning thermals that set down ships as far as 73 miles away. Rootin', tootin' *Zekes, Hogans* and *Fubars* ruled the roost—you haven't lived until you've put up a *Zeke* with one of those new hysterical .19's, and watched it climb like a skyrocket with half a mind—but only half mind you, the nice thing about a *Zeke*—to come back and clobber the pilot! The best way to describe the wild free flight events is to say that one went to the speed and stunt events to watch in safety and dignified calm.

Twenty-seven events in six boiling days—the Mexico City team were among the heat sufferers—should have

Herb Kothe, Grand Prairie, Texas, took an AB first PAA-Load. Here winds a rubber job.

Don Farage pumps while Pop holds model. In this event, Senior, L. Herbert Davis, hit 142.63 mph.

C. O. Wright, old time modeler and ex-AMA pres, helps one of his juniors with engine.

And a good time was had by all. Nation's biggest ROW event supplied fun and thrills.

Jim Clem, Clem-Dugger team, San Antonio, displays one of the two types of Monoline handles used.

Installation of Monoline in Clem-Dugger speed job. One-line may permit a speed increase.

satisfied the most fanatical contestants. The usual swarm of "one armed paper hangers" shot for the National Championship but only the guy who won it, Paul Simon, a Senior, would have admitted it. Simon and Bob Bienenstein, Open Champ, both flew for the *Detroit Balsa Bugs*, the Champion Club! Everett, Taibi, and other hot shots really knocked off the firsts but, as usual, it may not be vital to fly indoors but it sure helps!

It isn't the sound design alone or just the capable flier who wins an event—he should be a gifted swimmer, a marathon runner, invulnerable to the heat, possessed of a car and even a pilot's license for hunting strayed ships. The real battle is chasing after that ten minute flight, even if it lasts an hour, and despite lakes, swamps, woods, hills, and mid-day heat, getting back for another and still another good flight. The winning outdoor man has to be a strategist and a lightning repairman. Take Hank Cole.

Hank flies the longest Wakefield job in captivity. More than five feet of fuselage, yet, due to light construction and indoor wood, it weighs four ounces, less rubber. Duration is as long as the length of the body. When he winds they warn you not to trip over the lines. On the second flight the ship came down in Lake Worth and was half wrecked. Hank did a desperate rebuild, needing three minutes for first. No chance to test. Wind her up and let her go in the late afternoon. Three, oh three!

Or Sal Taibi who got 27 plus in A. Sal was swimming madly in the middle of the lake after one flight. On B day he waited for hours watching for a break in the weather. Came a brief lull and Sal and a lot of other patient vets turned loose another batch of hot flights between wind shifts.

They have their smart boys in speed, too. Tony Grish headed out bright and early on a good looking B day morn, made a quick test run, liked what he saw, and cut loose for a new record of 136 plus. When Grish's engine began to moan, everybody on the lot, whether he was drinking lemonade or chewing the rag, stopped dead and slid out a stop watch. Tony flies a fairly large model.

Asked Keith Storey, the U-control director, about this. Keith, himself an old speed flier, told us that most entrants still cut down size too much. How do you know when you have enough area, we asked. "Run the ship about 15 feet off, then dive and pull out. If it pulls out, you have enough area!" Keith answered.

Speed, t'was the consensus of opinion, was bitterly and evenly contested. So was stunt. Experts were heard talking about some of the dark horses that jammed into

The Sunday afternoon crowd loved the carrier event, won by SE-5 of all things! Event should be modified to encourage more entries.

Detroit Balsa Bugs champs: L to R—Bob Bienenstein; Otto Heithecker; Ken Held, AMA pres; Paul Simon; Steve Benovich, Ron Nowicki.

Joe Bilgri receives Berkeley award for Open Outdoor Cabin from Bill Effinger. Bilgri had success with amazing long fuselage job.

That's Paul Simon, right, national champ. Paul piled up points competing as Senior. Johnny Clemens, left, master of ceremonies.

high places. One of the real highlights of the meet was the amazing flight by Junior Harry Fiegel whose 148 plus in D topped both senior and open division. Some of those little juniors get out there with the aplomb of a Grish or a deBolt. 'Name" fliers were fewer than previous years with many an expert not in attendance. Juniors abounded and a sharp crop they are! Around the work hangar at night you could see the younger element operating and testing motors with a professional air that caught the eye. We shall not lack for "names" in the future. Quite a few teed off this year. Watch them in 1952!

If, design-wise, the Nationals showed no trends over 1950 or even 1949, there was, nevertheless, much of significance. Indoors flopped so badly that one could ask, "Should there be an indoors next year?" Trophies would have gone begging since there were not enough contestants in two categories to go beyond two places, and but three in still another. Towline glider was unexpectedly popular. ROW provides the biggest ROW event in the country, bar none, was a top show and the most fun of the meet. Everybody loves to chuck gliders, too. It would be smart for more local contests to cater to the modelers' tastes with such events.

The Navy carrier event is the best crowd attracter of them all, yet begs for entries. On the basis of Dallas, it would appear that the Navy should redesign the event to encourage grass roots competition. Types of ships and the landing and take-off area—the carrier—could be simplified to encourage a bigger entry list. Once the local boys fly some form of this event, the grand finale at the Nationals will be a certain success and a fitting climax.

The Nationals is the one place in the country where you can see every model event. No event should be a sacred cow that dare not be touched when it doesn't pay its way. Why bother with rubber-powered flying scale? At its best, it falls far short of CO-2, which didn't make the grade. AA powerplants are ideal for flying scale free flights. They go great at other contests. Why not at the Nationals? Why perpetuate indoors? It is difficult enough to find sponsors who can run a 27-event affair lasting a week, an event which requires some hundreds of personnel, without burdening things with special requirements for buildings on the order of the Will Rogers Coliseum, in Fort Worth, to say nothing of timers, and so on. When an event gets down to a handful of contestants who win their places against virtually no one, yet pile up points for the National Championship that cannot be offset by a couple of resounding outdoor firsts won against hundreds of fighting competitors, firsts won with much hard physical work and mental stress and strain of chasing, it is time to put the house in order. And what is the matter with team racing at the Nationals? Like the carrier event, it needs a transfusion in the form of some quick and necessary changes.

How did the different events stack up? Taking the entry list as a basis, 2,163 ships were entered. Over 600 modelers, averaged 3-1/2 planes apiece. About 75% of these actually competed. Percentage-wise, it works out to 42-1/2% for free flight, including ROW, or 37% without ROW; 17% for U-control, of which 13% was speed; 11% for payload; 7-1/2% for outdoor rubber; 5% for towline; 4% for indoor; 7% for outdoor H.L. glider. Allowance should be made, however, for such facts as towline being a single event, whereas free flight consisted of five classes. Stunt is another one-class event, as is H.L. glider. Radio, with 26 entries, about half of which flew, comprised but one per cent of the total activity.

But enough of this serious stuff! To really see the Nationals you need to be in six places at once. Three and four events may be going on simultaneously on a mammoth field like the Dallas Naval Air Station. You may not be able to look from one event to another! Depending on the wind, these events might be a mile apart, a mile of sun scorched concrete. So you run into Walker who calls, "Come out and see me barrel roll." By the time you get over to see Grish make a run, then somewhere else to watch Goldberg fly his *Cumulus*, then Gilliam put up a sky hooking *Civvy Boy*, or to watch Andrews stunt, you meet Walker coming back and he calls, "Should have seen

L to R—Mike Schlesinger, Jack McComb (Sr. AA winner), Carl Goldberg. Center trophy MODEL AIRPLANE NEWS, others from Top Flite.

George Gardner, PAA, congratulates the Cargo winners: L to R—Lamont Randolph, Daniel Simenson, Dick Everett, and Ted Grzeszczak

Open PAA-Load AA winners with Dallas Sherman, left, man with the idea. Tom Killough, Leon York, and the ever present Frank Ehling.

Amazing tribute to C. O. Wright was plaque reading thanks. Jim Walker got one for financing Wakefield team. Dick Everett, right.

it. Tried inverted flight." Or words to that effect. This goes on all week for everybody, staggering from water barrel to water barrel and squeezing into the official tents for shade. But you see plenty. F'rinstance.

Jim Clem and Jim Dugger, well known San Antonio speed team, experimented with *Monoline*. Seems that the boys anticipated the rules would forbid having the twisted rod, on which the control knob slides, out front beyond the pylon. Stanzel worked up a special handle, only to find the rules didn't work that way at all. On an official run, they nicked a prop. But Clem and Dugger felt confident that they would yet get more speed out of a one line deal. Went out with Vic and Joe Stanzel, two of the mildest Texans you ever did meet, and saw their large stunt jobs, then they checked out kid after kid—real sprats, too—on a *Tuffy*. Come on, Bill, try it, sez Vic. After watching those kids cut grass like oldtime jet peelots, we took off with rep still intact!

Saw George Aldrichs, a Senior, practice flying stunt. Had a keen airplane. One night he was doing square loops that had real corners. Five loops in the glide. Stuff like that. George, we remembered, used to follow the great Palmer around and some of that smoothness must have rubbed off. So we watched George fly officially—a realistic, big airplane based on the Caudron racer-in profile. He proceeded to rack up about 400 points, then couldn't shut his engine off and they hit him with a 40 point penalty, moving him down from first to third. But that is one ship you'll be seeing plans of soon.

Free flight practice session one night with Carl Goldberg putting up a *Cumulus*, Dick Everett likewise . . . Sal Taibi with an earth shaking B job. Bob Ottoman's *Flat Top* floating about weirdly, just oozing from stall approach to stall approach, rocking like grandmother's favorite chair. About a dozen other hot shots adjusting for the next day, too. You could write a book about the things they say. Doctoring the glide, the power turn, checking for effects of new warps, getting the old buggy into the groove that pays off on the morrow. (*Continued on page* 50)

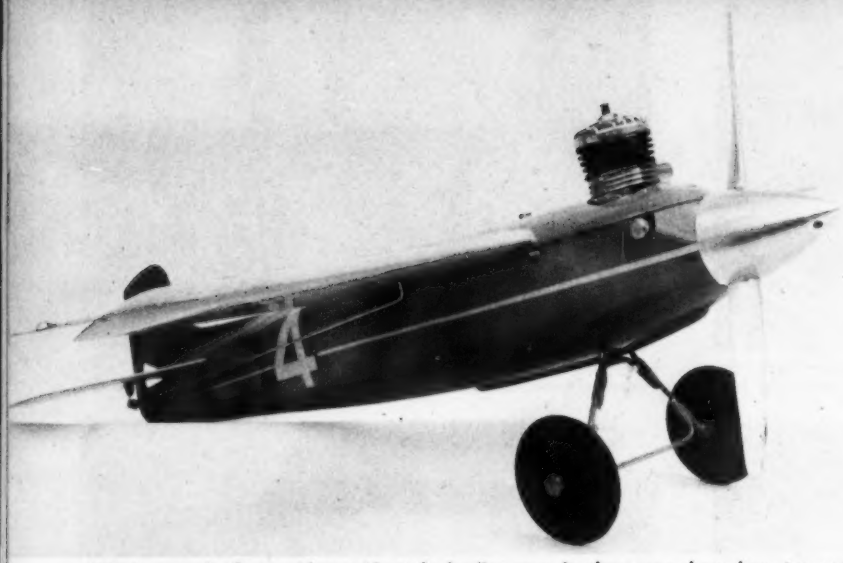
Harry Fiegel, a Junior from Texas, had fast time of 148 plus. Right—Gene Jackman, Oklahoma City, Junior Champ, B free flight trophy.

The flying young Goldbergs and pa, who competed in every Nationals.

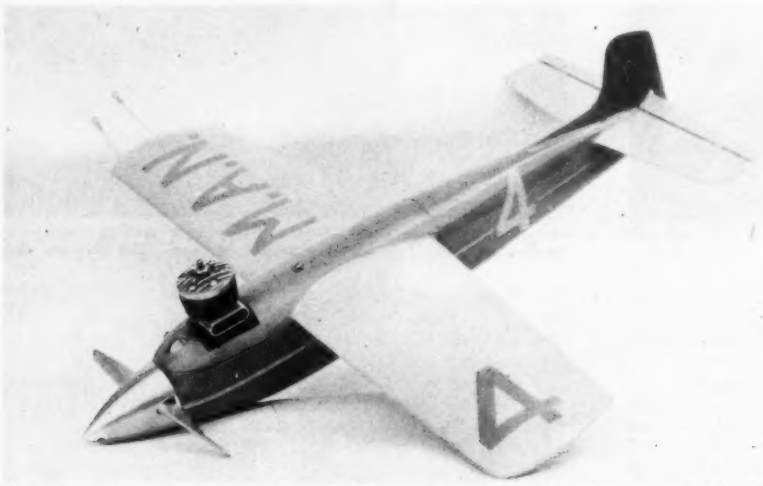
little JOE

by JIM MOYNIHAN

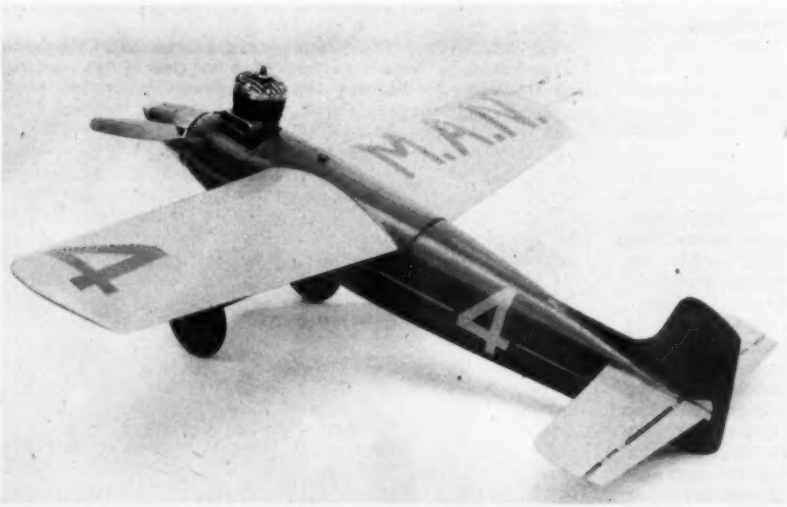
Harold deBolt designed, a Class A speed trainer, in use by Buffalo *Bisons*. It is intended to straddle the fence between sport and speed. Can be flown with or without landing gear.



Little Joe may be flown with or without the landing gear. In place, gear slows down top speed. On a McCoy or K & B .19, plane steps along at better than 100 mph, but is not difficult to fly.



Generous wing area prevents tail-low much common to improperly designed speed ships. The vertical tail is big enough to stop rolling in on the lines when the plane is hand-launched.



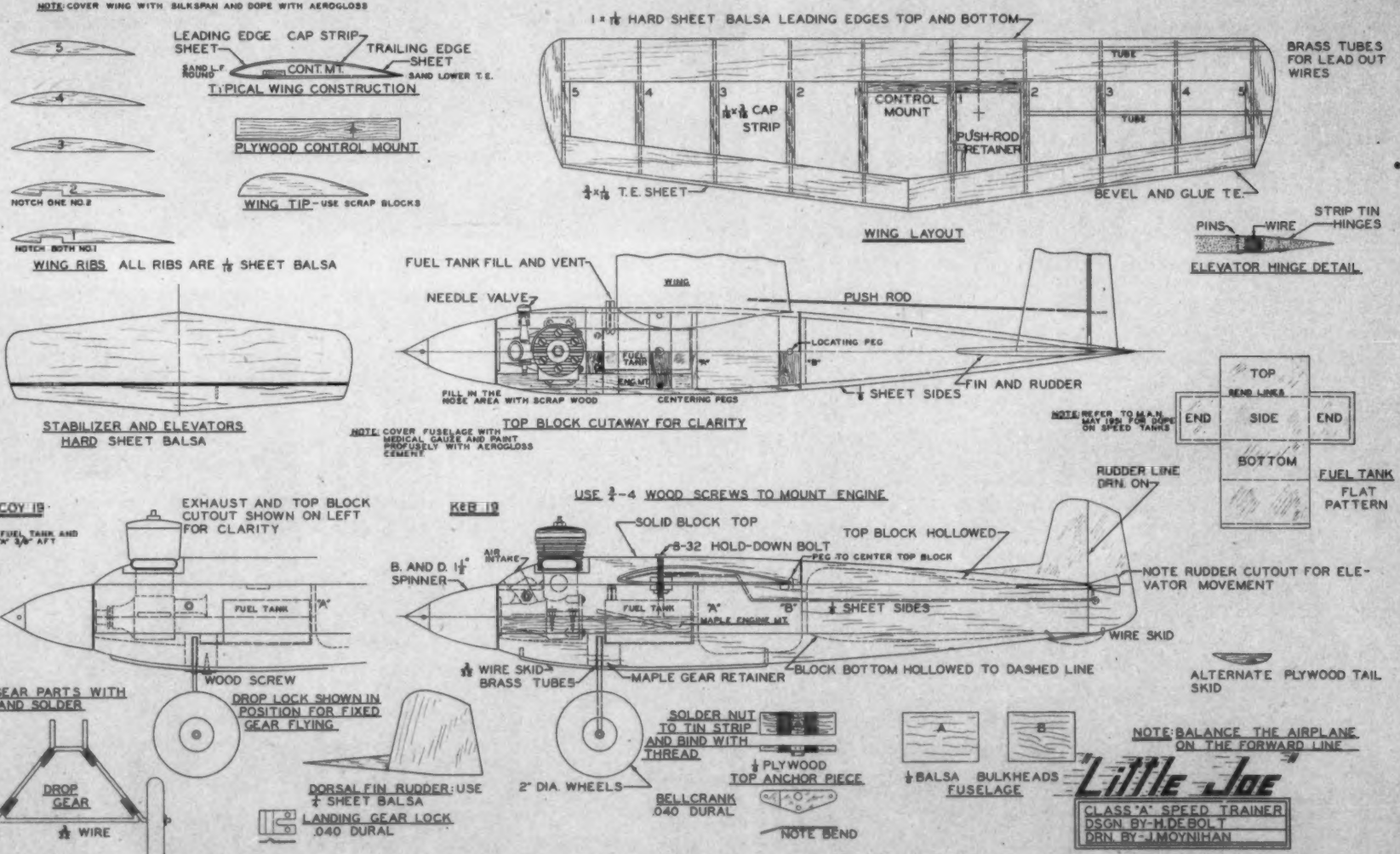
Hot dawg! Old MAN-4 isn't a bad looking speed buggy. Stick a canopy behind the wing hatch, trick up that dorsal fin and you have a high stepping sport job. Use a 7-9 prop for best results.

For most modelers, the jump from sport to speed is too much to handle in one step and they are usually plagued with a speed plane that is disappointing and discourages the flyer to such an extent that he gives up speed entirely. No one steps from a *T-28* to an *F-84*, so try this *T-6* of the model world and break into speed flying the easy and trouble-free way.

Construction is simple and pretty well standardized, but it is a rugged airplane if built according to the drawings and instructions. The power plant used in the prototype was a new K & B *.19* which, in our estimation, is comparable in power to most Class B sport type engines. It gets the airplane around a Class A circle at better than a 100 miles per hour, depending upon your prop. Provision has also been made for the installation of a McCoy *.19*, as shown on the drawing. Be sure to note the construction changes required if the latter type engine is used. Other engines can be fitted into the ship but these two are recommended.

The drop gear may be temporarily locked on the ship if you have a smooth field to land on; it will give you a smoother speed transition by slowing up the ship with its drag. There is enough wing area to give positive response to control movements without the tail-low mush found in high-speed ships, and more than the usual fin area to cut down any tendency to roll from torque during a hand launching. Now that you know what's what, let's get at the construction.

FUSELAGE—As you can see on the drawing, construction here is basic. The sides are 1/8" hard sheet balsa. Bevel the aft inside edges, cement them together and set the parts edges down on a flat surface to dry while you work on something else. Using hard maple, cut engine mount beams to size and cement them on the insides of the sheets and flush with bottom and front edges of (*Continued on page* 44)



FULL-SIZE PLANS FOR BOTH "LITTLE JOE" AND "THE DRAKE" AVAILABLE. SEE PAGE 62.

air ways

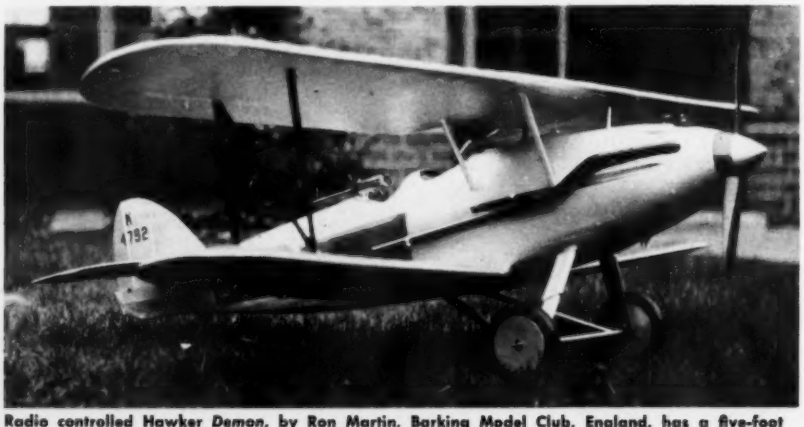
TOP-NOTCH MODELS BY THE READERS IN MANY NATIONS

First prize winner ($10) for workmanship goes to Luis Roman Diaz, of Mexico, for this truly beautiful Pitt's *Special*. Made from a Berkeley kit, it has done 85 mph, wingovers. Has an O & R .33 engine.

Dooling Delta. Odd plane entered by Jack Freeman, Bronx, N. Y., Plymouth eliminations.

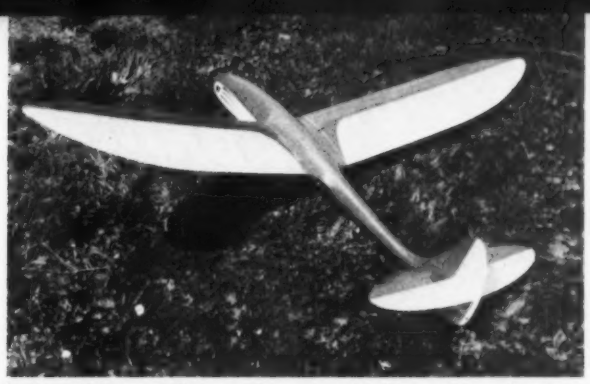
It takes 80-foot lines and a flying speed of 100 mph to do the full AMA pattern, and no fooling, says Diaz, who also built this highly successful flying wing. An Anderson *Spitfire* engine power.

Nine-foot *Strato Clipper*, Shoichi Kawabata, Osaka, weighs 12 pounds, flies on 120-foot lines. Four Jap

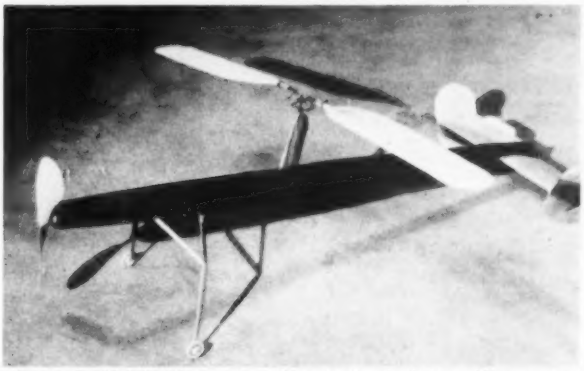


Radio controlled Hawker *Demon*, by Ron Martin, Barking Model Club, England, has a five-foot span, and an ETA 29 glow-plug engine for power. Takes a strong heart when it comes to flying!

Good will ambassador is the *Rudderbug*, made in many lands. This one by Sven Buchholz, Norway, who made his own radio, flies on ice and snow.

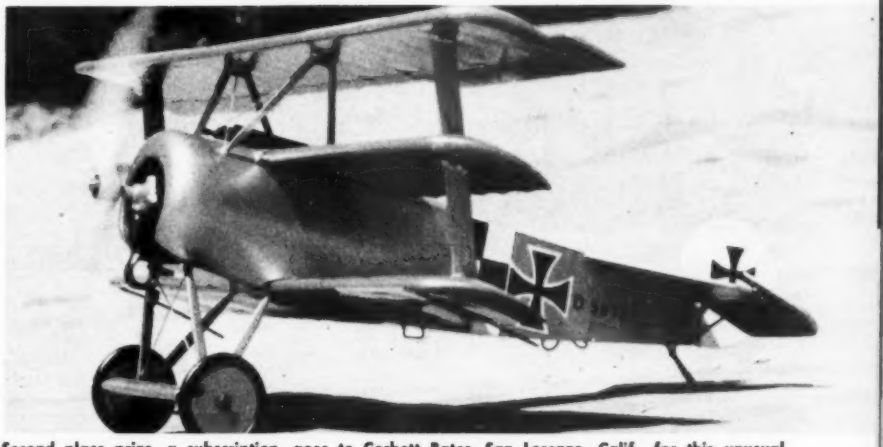


Pretty sailplane—towliner to the contest fiends—is the handicraft of Albert Schaer, Basel, Switzerland. Gliders are popular in Europe.



Plenty of midnight oil went into the rotor head of this rubber-powered autogyro, by T. Umegaki, Japan. Designed by Mr. Kosaki 20 years ago!

OS 29's. Cost of $100 born by Cemedine cement manufacturers. Model makes exhibition flights.



Second place prize, a subscription, goes to Corbett Bates, San Lorenzo, Calif., for this unusual Fokker *Triplane*, made from Carter Craft kit, with wings from Cleveland kit. Campus 100 power.

Corncob engine—the P & W 28-cylinder engine in the *Strato-freighter*—wins the third place subscription for T/Sgt. Ladd Canney, from 1263d Air Transport Squadron, Pacific Division, MATS.

by Val A. Luce

we test the FLASH

Stressing simple, rugged construction and good performance, the *Flash* proves a pleasant model fly. Did well on its first test hop.

Anyone who has ever put a Jasco kit job together knows the quality and quantity always to be found in one; those who haven't should complete their educations and see what a conscientious manufacturer can do. The wood is not only smoothly cut and of the right hardness for its intended use; it's also remarkably free of worm holes, warps and all other faults usually found. There's enough of it, too—sufficient to take care of the little slips even the most experienced veteran makes occasionally. The paper, also, can be slashed with abandon—in a manner of speaking—and the builder will still have plenty to do the job. Rather than come up with a single color covering job, we used blue *Skysail* for the fuselage, consuming a scant quarter of a sheet. The wing and tail used up one of the two sheets of red paper furnished, so we wound up with a full sheet untouched. A comment on the paper: although it looks like a prune when wet, it dries with as even a shrink in all directions as we have ever seen.

The three wood screws are intended for use in mounting the engine, although the plans show a pair of hex nuts soldered to a strip fastened to the inside of the firewall. One suggestion has to do with the mahogany veneer furnished in place of plywood, particularly for the wing and tail supports. These, under pressure and in damp weather, tend to warp down, causing unstable mounting. The use of 1/16" plywood is recommended for these parts. It might be well to mention here that we made the wing supports a wee bit wider than shown, because of the fear—probably groundless—that they weren't wide enough to eliminate a wobbly wing. The veneer will work for the firewall, since it's of laminated construction, but we used plywood here too.

Assembly is as straightforward as possible—the fuselage is a "box" of 1/8" square strip, with four longerons and small crosspieces. For construction capable of withstanding collisions with trees and other unavoidable adamant objects, we'd suggest a little extra time and effort in seeing to it that all joints are flush fits, square where required or angled to contact bent longerons. An additional guarantee of strength involves cutting all crosspieces for both sides prior to assembly; ditto for top and bottom pieces. This

The author releases the test job on its first power flight. Over 50 flights were made for this article, both in calm, windy weather.

Wasp running wide open, dethermalizer fuse lit, Val makes quick final needle valve adjustment before making hand-launched flight.

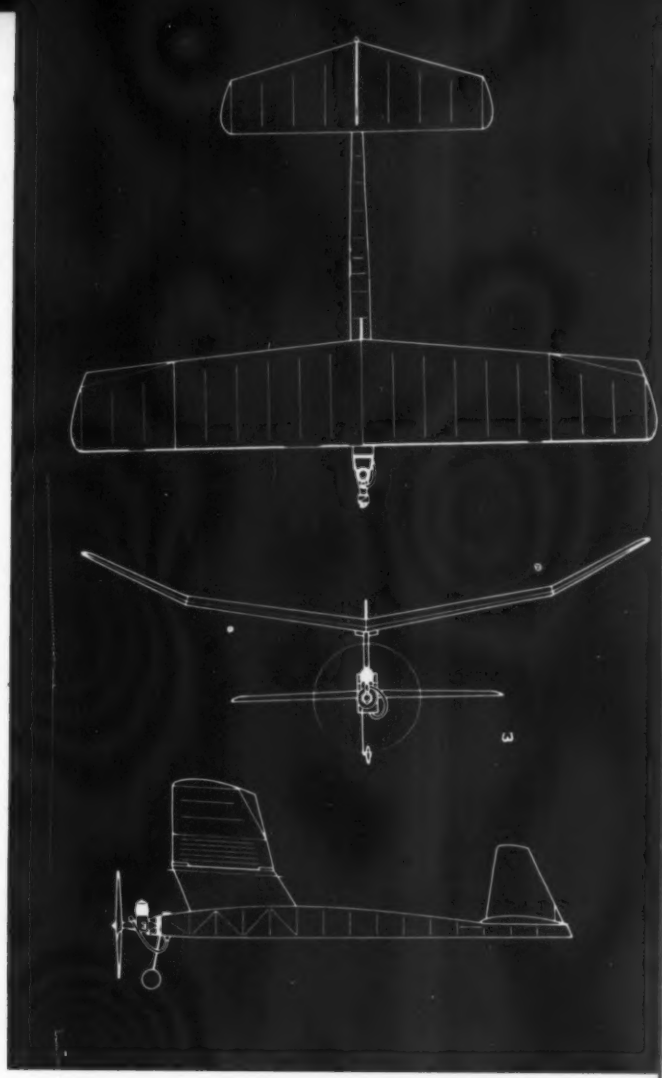
also helps in keeping the two sides identical. Coat the ends of each crosspiece when cut with cement and permit them to dry before cementing them in place. This helps fill up the absorbent open pores when balsa is cut across the grain, so that the cement used for assembly won't sink into the open pores and be lost.

Another way to insure strength is to place pins *on both sides* of longerons, rather than through them, when laying them in place over the plans. Each pin-hole represents a weak spot. This can be proved by pushing a pin through a strip, withdrawing it, then bending the strip until it breaks.

We found that the model, when completed, balanced a wee bit aft of the point shown on the plans. This could be aggravated still further with the installation of one of the smaller, lighter engines. Hence, we'd suggest that the pylon be altered so that the wing is moved aft when the .035 or .039 is used. The alteration is not complicated, consisting merely of making the front edge of the pylon vertical, rather than the rakish forward sweep shown, with the aft edge more nearly vertical. Be sure, however, to keep the wing at the same height and angle originally intended. A model with its balance—the center of gravity—too far back will have a tendency to loop rather than climb smoothly, or will "hang on the prop" and go nowhere under power. In addition, power-off flight tends to be a series of dips, or stalls, rather than the sought after smooth glide. We eliminated the effect of our errant C.G. with a combination of offset thrust and hand-launched glider warping of stabilizer which is a little on the tricky side. (C.G. position varies from model to model, depending on material and construction.) Take our word for it, it's far easier to trade on the other fellow's experience in this case and move the wing back. True, the rakish, swept-forward look is gone, but the model will perform much better. Adjustment suggestions for the contest-minded are given below.

Assembly of the wing is simplicity itself, what with the shaped leading and trailing edges and die-cut ribs. Use your X-Acto knife or razor blade in separating the latter from the sheets so as to avoid rough edges. A light sanding will then suffice to render them smooth. A true contour leading edge can be the making of an effective wing, so sand the leading edge stock carefully.

After all, if a wing's leading edge is rough to start with, it's safe to assume that the airflow across the wing will be correspondingly uneven. Those intending contest flying will do well to sand a smaller (*Continued on page* 42)



Close-up of pop-up tail type of dethermalizer. Action is positive, bringing ship down in long, fast, steep descent. It never failed!

Flipping motor with nose slightly up to prevent flooding. The booster leads with slip-on connections should be used for maximum glow plug service.

Plymouth pres awards trophies to Freshman tie-winners, Chris Hanson, 10, left; Fred Sage, III, seven.

William Sadler, dealer, flew in three entrants

Below—The list of first place winners.

CONTROL LINE—CLASS A
Freshman—Alfred M. Davis, 112.17 mph, Birmingham, Ala.; Junior—Richard A. Modler, 114.75 mph, Dayton, Ohio; Senior—Charles Le Boeuf, 121.25 mph, Dayton, Ohio.

CONTROL LINE—SPEED—CLASS B
Junior—Dick A. Modler, 127.07 mph, Dayton, Ohio; Senior—Clifford Telford, 130.67 mph, Cincinnati, Ohio.

CONTROL LINE SPEED—CLASS CD
Junior—Dick A. Modler, 143.83 mph, Dayton, Ohio; Senior—Herbert L. Davis, 148.33 mph, Birmingham, Ala.

NAVY CARRIER EXHIBITION
Junior, Senior—Valgone Hayworth, Sedalia, Mo.

COMBAT AB
Junior, Senior—Gerald Pollauf, Toledo, Ohio.

CONTROL LINE STUNT
Freshman—D. W. Alford, San Diego, Calif.
Junior—Gary L. DeVore, Midland, Mich.
Senior—G. M. Aldrich, Edinburg, Texas.

TEAM RACING
Main Event—Robert M. Mastrovitch, Fords, N. J.; Consolation—Henry LaVon, Tacoma, Wash.; Beauty—Robert B. Randall, Edmonton, Alberta.

JET SPEED
Junior—Thomas Mattingly, 138.62 mph, Hialeah, Fla.
Senior—Herbert L. Davis, 144.29 mph, Birmingham, Ala.

FREE FLIGHT GAS—CLASS A
Junior—Joseph F. Ziomek, Detroit, Mich.; Senior—Larry Erickson, Omaha, Nebr.

UNLIMITED RUBBER
Freshman—Clifford Gray, N. St. Paul, Minn.; Junior—James C. Watson, Ft. Des Moines, Iowa; Senior—C. M. Redlin, Detroit, Mich.

FLYING SCALE
Junior—Henry LaVon, Tacoma, Wash.; Senior—David Lefebvre, Seattle, Wash.

COMBAT—CLASS CD
Junior, Senior—Charles W. Mullin, San Antonio, Texas.

HAND-LAUNCHED GLIDER
Freshman—Douglas Hinkel, Wauwatosa, Wisc.; Junior—G. Stromberg, San Francisco, Calif.; Senior—Robert Yurkowski, Chicago, Ill.

FREE FLIGHT GAS—CLASS BC
Junior—Don L. Davis, Kansas City, Mo.; Senior—J. Richard Salzer, Patchogue, L. I., N. Y.

FREE FLIGHT—CLASS ½A
Freshman—Team: Carolyn Rhines, Manchester, Conn.; Junior—Raymond Fry, Stow, Ohio; Senior—Donald Belote, Toledo, Ohio.

During four hectic days, 510 contestants competed in the 1951 Internationals at Detroit. Emphasizing youth, Plymouth had a Freshman as well as Junior and Senior divisions, had one three-year old entry. Over 100 trophies, bond awards, retrieving of models, banquet, all was right. Many new records were set.

5th INTERNATIONALS

Joe "Pappy" Matulis briefs six-year old daughter Theresa in the fine art of chucking a glider. One small fry had to be held down by pop when he tried to fly control line.

Checking out their ships in "Pilots and Mechanics" headquarters, L to R—Gordon Affeldt, Earl Herner, David Redmond, Russell Cornell, Robert Pyfrom.

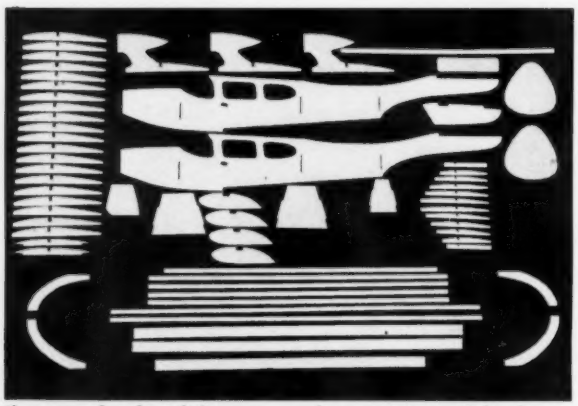
Herbert L. Davis, Senior high-point winner—he did okay at Nats, too—receives trophy. Herb did 144.29 in jet, 148.53 in CD speed. Some hardware!

Aptly named Dick Modler gets Junior high-point trophy. Did 114.75, 127.07, 143.83 in three speed classes, second in flying scale, third in AA.

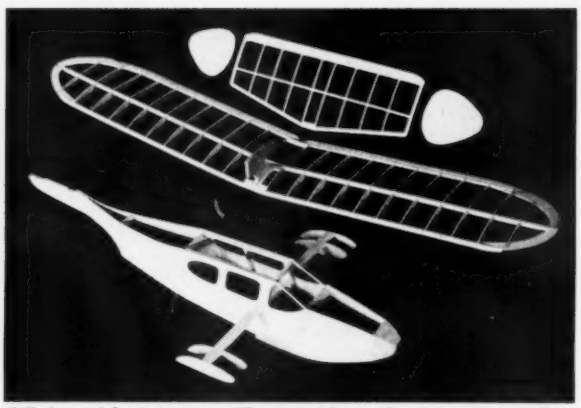
the Drake...

by Ken Willard

Flying surfaces and gear attach with rubber bands. Flat-bottom hull insures good take-offs, keeps sponsons clear of surface when model gets on step.

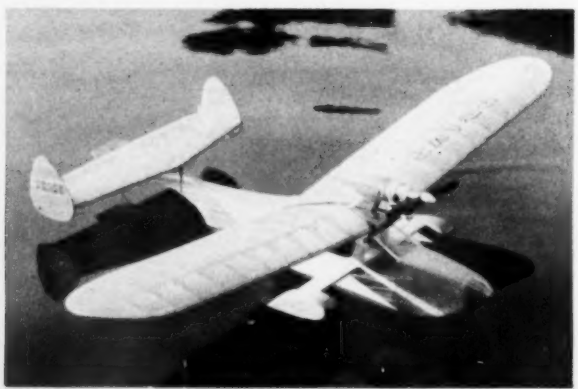


These are the sheet balsa parts used on prototype. Slight changes were incorporated in the drawings. Looks like prefabrication!



Skilled model designers will rave about the ingenuity, realism, and simplicity so nicely combined in both structure, assembly.

Once in a blue moon do you see an amphibian as nice as this one. It flies on .02 to .049's.

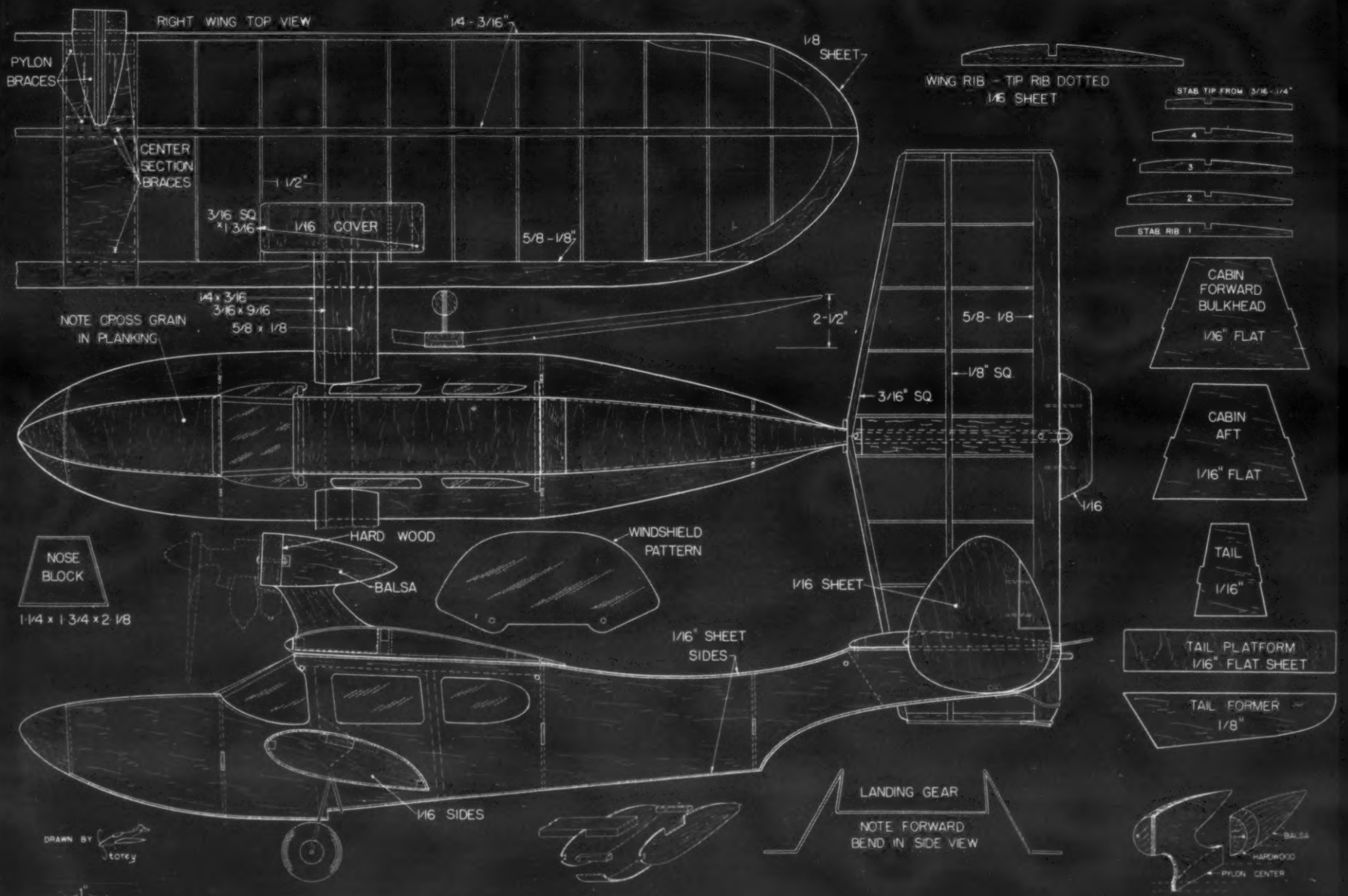


The *Drake* floats nose high out of water which means planing characteristics are good, that landings will be smooth.

Model amphibians present a unique challenge. Not only must they have air and water stability, they must have a hull and float design that permits water take-offs. Yet, when the wheels are down, the hull and the floats are protected and flying on land won't damage their structure.

The *Drake* was designed to meet this challenge. It flies equally well on field, or lake. Only minor adjustments are required to make the transition from landplane to seaplane, and the effect on flight characteristics is hardly noticeable.

Some may question the flat-bottomed hull, but experiments show that for model work this type of hull is highly satisfactory; the author has used the basic hull design of the *Drake* on models all the way from 18" jobs powered by the Campus *A-100* up to the design shown here with equal success. The flat bottom gives a "sea sled" effect which makes water take-offs very successful. It also assures that the sponson-pontoons, which provide water stability when the model is at rest, will ride free of the water during take-off. When the model is "on the step" the sponson-pontoons are well out of the water; also, the flat bottom of the hull resists lateral tipping when the model has attained "step speed." (*Continued on page* 56)

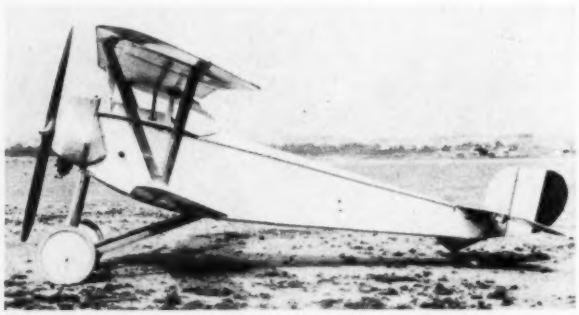


FULL-SIZE PLANS FOR BOTH "LITTLE JOE" AND "THE DRAKE" AVAILABLE. SEE PAGE 62.

The narrow chord lower wing of the birdlike Nieuport fighters was a development of a straight-through bracing spar for earlier monoplanes.

Nieuport 11

by ROBERT C. HARE



The "13 meter Nieuport" had area equal to today's *Ercoupe*, less than a *Cub*. Did 97 mph, landed at 30, took off in but 100 feet.

Concocted as the French answer to the synchronized-gun Fokker *E-1's*, the graceful Nieuport *11* was put to good use by the renowned *Lafayette Escadrille* squadron.

After the Fokker monoplanes, equipped with the synchronized machine gun, appeared over the French and British sectors of the Western Front in 1915, the Allies entered into a mad scramble to produce machines that could cope with the German menace.

The British countered with the De Havilland *2* and the *F. E. 8*, both small pusher biplanes, and in general configuration small editions of the De Havilland *1* and *F. E. 2b*, respectively. The little pushers had respectable performance which approximated that of the Fokker. They even had an advantage in visibility, with the pilot sitting out in front of the bathtub-like nacelle. The machine gun, fixed to fire forward, was aimed by aiming the plane as in the Fokker, but did away with the synchronizing gear.

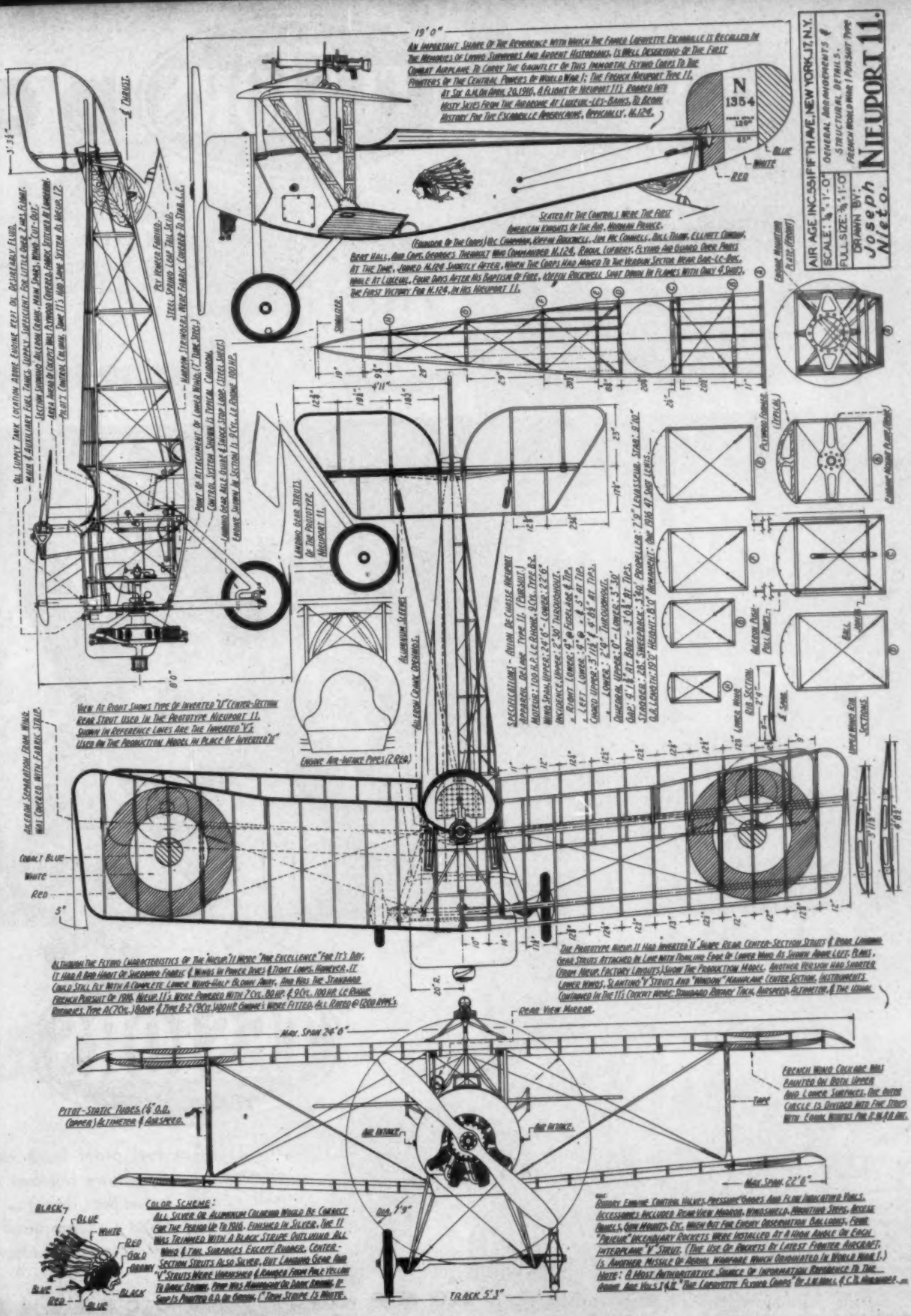
Over in France, the Air Service threw into the breech a conglomeration of types, principally Nieuport two-seaters and Sopwith *1 A2* (British 1½ strutters) which pilots of the Tri-Color used as two-place fighters. The French, who were also caught short without the synchronizing gear, developed a smaller edition of the Nieuport two-seater, calling it *Model 11*. Thus favoring the tractor biplane type, they were forced to attach their forward firing gun to a superstructure on the upper wing, firing over the propeller disc. This little single seater, officially designated as *Nie. 11C-1*, came out in the fall of 1915 and set the pattern for a series of highly successful single seaters that were in use in one way or another until the end of World War I.

Prior to 1914, the Nieuport firm had gained a good deal of success with its monoplane, a good-looking, rotary engined, shoulder-wing ship that placed high in every air race it finished. It was one of the first types with a covered fuselage, but still sported external wire wing bracing. Nieuport engineers began building their monoplanes with a rigid external bracing arrangement. They ran a spanwise beam out from the bottom of the fuselage on each side, and connected it to the upper wing with a series of bridge-type struts and Warren truss bracing.

The Nieuport engineers went on, however, from where the others stopped . . . they made the spanwise beam into a narrow chord wing, put the upper wing in parasol position, put in some "V" shaped interplane struts and conventional biplane wire bracing, and came up with the Nieuport "one and one-half" plane. Thus the spanwise beam was made to contribute to lift as it did its structural job, and the visibility advantage of the parasol upper wing was gained.

Immediate predecessor to the *Nie. 11* was *Model 10*, built both in single and two-seat versions. *Model 10*, with a wing area of 18 square meters became the smaller *Model 11*, with a wing area of 13 square meters—hence the additional popular identification ". . . the 13 meter Nieuport."

Thirteen meters, about 140 sq. ft., compares to the area of an Ercoupe, or something less in area than a modern *Cub*. Obviously a small airplane, the *Nie. 11* spanned 24' 6" in the upper wing and (*Continued on page* 59)


NIEUPORT 11.
AIR AGE INC. 551 FIFTH AVE. NEW YORK, N.Y.
SCALE: ½" = 1'-0"
FULL SIZE: ⅜" = 1'-0"
DRAWN BY: Joseph Nieto.
GENERAL ARRANGEMENTS & STRUCTURAL DETAILS. FRENCH WORLD WAR I FIGHTER TYPE
19'0"
N 1354
Rotary 120 H.P.
BLUE
WHITE
RED
SEATED AT THE CONTROLS WERE THE FIRST AMERICAN KNIGHTS OF THE AIR, NORMAN PRINCE, (FOUNDER OF THE CORPS) Lt. CHAPMAN, KIFFIN ROCKWELL, JIM MC CONNELL, BILL THAW, ELLIOTT CHANDLER, BERT HALL, AND CAPT. GEORGES THENAULT WHO COMMANDED N.124, RAOUL LUFBERY, FLYING AND GUARD DUTY PARTS AT THE TIME, JOINED N.124 SHORTLY AFTER, WHEN THE CORPS HAD MOVED TO THE VERDUN SECTOR NEAR BAR-LE-DUC, WHILE AT LUXEUIL, FOUR DAYS AFTER HIS BAPTISM OF FIRE, KIFFIN ROCKWELL SHOT DOWN IN FLAMES WITH ONLY 4 SHOTS, THE FIRST VICTORY FOR N.124, IN HIS NIEUPORT 11.
AN IMPORTANT SHARE OF THE REVERENCE WITH WHICH THE FAMED LAFAYETTE ESCADRILLE IS RECALLED IN THE MEMORIES OF LIVING SURVIVORS AND ARDENT HISTORIANS, IS WELL DESERVING OF THE FIRST COMBAT AIRPLANE TO CARRY THE GAUNTLET OF THIS IMMORTAL FLYING CORPS TO THE PIONEERS OF THE CENTRAL POWERS OF WORLD WAR I: THE FRENCH NIEUPORT TYPE 11. AT SIX A.M. ON APRIL 20, 1916, A FLIGHT OF NIEUPORT 11'S ROARED INTO MISTY SKIES FROM THE AIRDROME AT LUXEUIL-LES-BAINES, TO BEGIN HISTORY FOR THE ESCADRILLE AMERICAINE, OFFICIALLY, N.124.
OIL SUPPLY TANK LOCATION ABOVE ENGINE KEPT OIL DELIVERY FLUID.
WASH & AUXILIARY FUEL TANKS - SUPPLY INJECTION FOR LITTLE RACE 2 MIN. RUNS.
SECTION SHOWING AILERON CRANK ARM SPARS, WING "CUT-OUT".
AREA ABOVE IN CROCKET BAY, PLYWOOD COVERED, FABRIC STITCHED & LAMINATED.
PILOT'S CONTROL COLUMN. SOME 111'S HAD SAME SYSTEM AS N.103 & 12.
Ply Veneer Fairing.
Steel Spring Leaf Tail Skid.
Harrow Stemwires Were Fabric Covered To Trail C.G.
Cockpit.
Boat Or Attachment Of Lower Wing. (1" Tube Spar.)
Control System Shown Is Typical Columbia.
Landing Gear Axle Guide & Large Strip Loop Steel Spring.
Engine Shown In Section Is 80 H.P. Le Rhone.
Landing Gear Struts Of The Prototype Nieuport 11.
Aluminum Sleeves
Aileron Crank Operates.
Engine Air-Intake Pipes (2 Req'd.)
View At Right Shows Type Of Inverted "V" (Center-Section Rear Strut Used In The Prototype Nieuport 11. Shown In Reference Lines Are The Inverted "V's Used On The Production Model In Place Of Inverted "V"
Aileron Separation From Wing Was Covered With Fabric Strip.
Cobalt Blue
White
Red
5°
SPECIFICATIONS - Avion De Chasse Nieuport Admiral Biplane Type 11. (Pursuit)
Admiral: 100 H.P. Le Rhone. 9 Cyl. Type B2.
Mixture: 100 H.P. Le Rhone. 9 Cyl. Type B2.
Wing Span: Upper: 24'6" - Lower: 22'6"
Incidence: Upper: 2°30' Throughout.
Dihedral: Right: Upper: 4° @ Ailerons & Tips. Lower: 5° @ 2'-3" & 4'-3" at Tips.
Left: Upper: 5° @ 2'-3" & 4'-3" at Tips. Lower: 2°30' Throughout.
Chord: Upper: 5'3½" & 4'6½" at Tips. Lower: 2'0" Throughout.
Gap: 4'1" at Root - 3'6½" at Tips.
Stagger: 28. Sweepback: 3°30' Propeller: 7'9" Levasseur. Start: 9'00"
G.A. Length: 19'6" Height: 8'0" Armament: One 1916 .47 Shot Lewis.
Original Armament (Typical)
Aileron Corner (Typical)
Original Mounting Plate (Front)
Aileron Post Ball Bearing
Ball Bearing
Aileron Cable Section
Lower Wing
Aileron Bay
Upper Wing Rib Sections
Although The Flying Characteristics Of The Nieup. 11 Were "Par Excellence" For It's Day, It Had A Bad Habit Of Shedding Fabric & Wings In Power Dives & Tight Loops. However, It Could Still Fly With A Complete Lower Wing-Half Blown Away, And Was The Standard French Pursuit Of 1916. Nieup. 11's Were Powered With 7 Cyl. 80 H.P. & 9 Cyl. 100 H.P. Le Rhone Rotaries, Type AC (70 lbs.) 80 H.P. & Type B-2 (190 lbs.) 100 H.P. Engine's Were Fitted. All Rated @ 1200 R.P.M.'s.
The Prototype Nieup. 11 Had Inverted "V" Shape Rear Center-Section Struts & Rear Landing Gear Struts Attached In Line With Trailing Edge Of Lower Wing As Shown Above Left. Plans, From Nieup. Factory Layouts Show The Production Model. Another Version Had Shorter Lower Wings, Slanting "V" Struts And "Window" Mainplane Center Section. Instruments Contained In The 11's Cockpit Were: Standard Rotary Tach., Airspeed, Altimeter, & The Usual.
Gear View Mirror.
Max. Span 24'6"
Pitot-Static Tubes. (¼" O.D. (Copper) Altimeter & Airspeed.
Air Intake.
Air Intake.
French Wing Cockade Was Painted On Both Upper And Lower Surfaces. The Outer Circle Is Divided Into Five Strips With Equal Widths For R.W.B.R.W.
Tape
Max. Span 22'6"
Color Scheme:
All Silver Or Aluminum Coloring Would Be Correct For The Period Up To 1916. Finished In Silver, The 11 Was Trimmed With A Black Stripe Outlining All Wing & Tail Surfaces Except Rudder. Center-Section Struts Also Silver, But Landing Gear And "V" Struts Were Varnished & Ranged From Pale Yellow To Dark Brown. Prop Was Mahogany Or Dark Brown. If Spinner Is Painted R.B.W. Or Green, "Trim Stripe Is White.
Black
Blue
White
Red
Gold
Brown
Blue
Black
Red
Blue
Dia. 1'9"
Track 5'3"
Rotary Engine Control Valves, Pressure Gages And Flow Indicator Vials. Accessories Included Rear View Mirror, Windshield, Mounting Steps, Bowser Bowls, Gun Mounts, Etc. Much But For Every Observation Balloons, Four "Prieur" Incendiary Rockets Were Installed At A High Angle On Each Interplane "V" Strut. (The Use Of Rockets By Latest Fighter Aircraft Is Another Missile Of Aerial Warfare Which Originated In World War I.)
Note: A Most Authoritative Source Of Information Reference To The Above And Vols. I & II "The Lafayette Flying Corps" By J. H. McMall & C. H. Haldeman.

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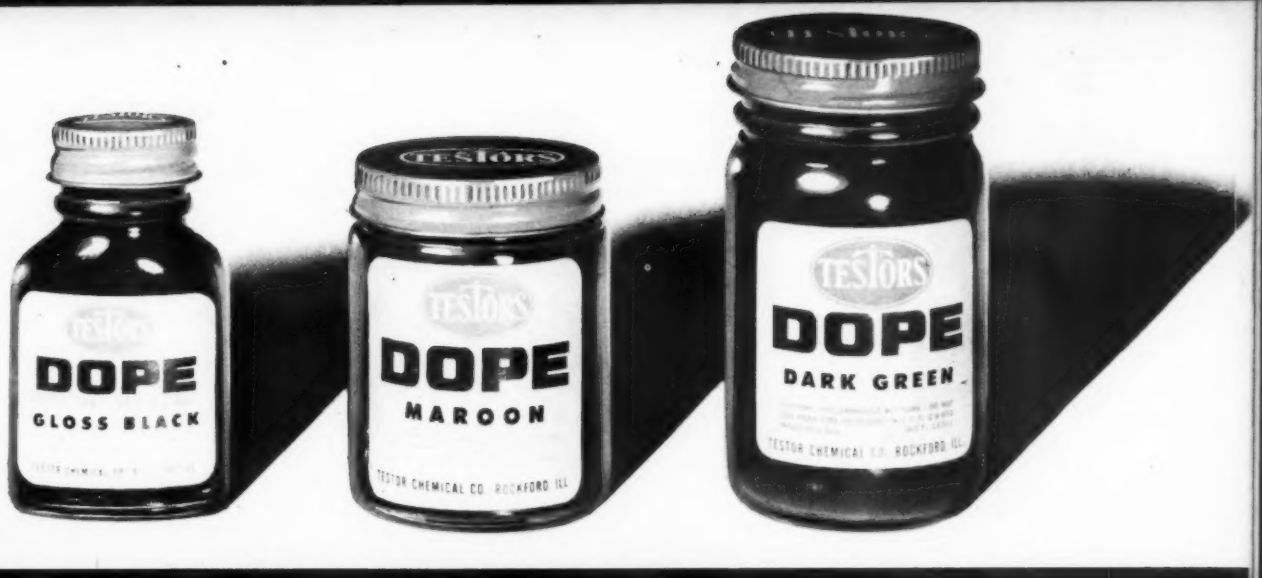
Formulated *especially* for model airplanes[illegible]le in a complete range of 25 colors and clear. [illegible]ed in quality for one-coat coverage . . . smooth, high gloss surface . . . pure color brilliance. [illegible] 25c 40c (1/4 pint), etc.

TESTORS ST

The *only* hot fuel proof finish which [illegible] in affected by any known hot fuel. Fa[illegible]ng . well (actually better than dope) . . . no[illegible]g o . . . excellent luster . . . lends itself we[illegible]and Available in 14 colors and clear. [illegible]5c



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CEMENT

Available in 3 formulas . . . each one specially developed to meet the exact requirements of a particular type of cementing work. Be sure you use the *right* cement for *every* job . . . makes model-building easier. Tubes: 15c and 25c.

TESTORS
STA
A QUICK-DRYING HOT FUEL PROOF FINISH FOR MODEL AIRPLANES THIN ONLY WITH STA THINNER
DARK RED
TESTORS
STA
A QUICK-DRYING HOT FUEL PROOF FINISH FOR MODEL AIRPLANES THIN ONLY WITH STA THINNER
MEDIUM BLUE
TESTOR CHEMICAL CO. ROCKFORD, ILL.

official news

Left—At August 19 ff contest, Sky Demons, at Hicksville, L. I., this registration booth was part of swell deal. Above—Bob Hatschek row's an AA from tank filled by the Syosset Fire Dept.

by RUSS NICHOLS and CARL WHEELEY

Details of the 1952 Wakefield eliminations • 1952 PAA-Load now being formed • New International or F. A. I. records • National records now pending • Details of record planes • Contest Calendar.

Paul Simon, Detroit, Mich., New National Champion. A Senior, Paul's points were enough to capture for him the Exchange Club Championship Trophy over Gene Jackman, Oklahoma City, Okla., the Junior Champion with 158 points and Bob Bienenstein, Detroit, Mich., the Open Champion with 109 points. With two champions on their team, the *Detroit Balsa Bugs* had little trouble in retaining their Club Champion title.

The Nationals are always a memorable event. Contestants this year will remember the heat, the thermals, the lake, the rafters in Ft. Worth, and Maurice Teter and his terrific bunch of officials which made the contest such a success.

The Open Contest Board Meeting is generally the liveliest of gab sessions open to all contestants at the Nationals. If something isn't liked, the Open Contest Board Meeting is the place to say it. This year the discussion centered around the Wakefield and Unlimited outdoor rubber events. Early in the year the Contest Board had decided that a Wakefield model could not be entered in both Wakefield and Unlimited events at one contest but that two Wakefield models could be entered in the two events. Apparently many of the contestants were not familiar with this ruling and had planned to fly their Wakefield model in both events. The outcome was that a vote of those present at the meeting was taken and it was their unanimous decision that a Wakefield model should be allowed to be flown in both events for the balance of this year but not next year. A suggestion for the future was that "Unlimited" models be limited to a specified wing area or fuselage cross section so they would differ from Wakefield models.

AMA Wakefield Committee Releases 1952 Elimination Information. Since the 1952 Wakefield Finals will be held in Sweden, it is necessary to choose a team under non-thermal conditions almost the same as this year. Minor modifications have proven desirable and the highlights of the committee's program follow:

Dates: Eliminations—May 24 and 25, except for ones on the West Coast which shall be held April 19 and 20. Semi-finals June 7 and 8 except for the one on the West Coast which shall be held may 24 and 25.

Elimination cities: West—Sacramento, Calif.; Los Angeles, Calif.; Seattle, Wash.; Midwest—Chicago, Ill.; Minneapolis, Minn.; Dallas, Texas; Galesburg, Ill.; Detroit, Mich.; Kansas City, Mo.; East—Boston, Mass.; Atlanta, Ga.; Norfolk, Va.; Cleveland, Ohio; New York, N. Y. Additional eliminations can be arranged if 15 or more flyers are available.

Semi-final cities: West—Sacramento, Calif.; Midwest—Kansas City, Mo.; East—Baltimore, Md. Two team members will be picked from each (*Continued on page* 46)

HEY FELLOWS! LOOK AT THE SWELL PILOT'S CAP I GOT WITH A SPEEDEE-BILT MODEL
ME TOO! SEE THE SWELL IDENTIFICATION TAG I GOT FROM MONOGRAM!

Identification Tag Will Be Engraved With Your Name

Get Your Pilot's Tag and Cap—Fellows!

Cap or Tag Sent for One Speedee-Bilt Box End and 25c. Send Two Box Ends and 50c for Both.

It's the new long-peak pilot's cap that smart fellows are wearing Identification tag, engraved with your name, is airplane metal, with safety catch and chain to fit the wrist. Send end from Sabre Jet, Corsair or Warhawk box and 25 cents in coin for your choice. Send 50 cents and two box ends if you want both cap and tag. Write plainly. Mail to address below.

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Kit G-13

Swept-Back Wings • Deadly Fire Power

All These Parts in This Kit—Plastic Cowling—Plastic Pilot—Plastic Rockets (4)—Plastic Exhaust—Famous Monofoil Wing (Right and Left)—Prefabricated Fuselage and Tail Parts, in Full Color and Die Cut—Plastic Canopy (Detail Molded)—3-Color Decals—Rubber Wheels—Metal Landing Gear, (Specially Formed)—Detail Picture Plans and 9 other parts.

NEW
Kit G-14

Gull Wings Easy to Build • More Simplified Construction

Corsair Parts List—Four-Bladed Plastic Prop—Plastic Cannon—Plastic Pilot—Plastic Cowl—Prefabricated Fuselage and Tail Parts, in Full Color and Precision Die Cut—Monofoil Wings (Right, Left and Center Sections)—Three-Color Genuine Decals—Rubber Wheels—Landing Gear (Specially Formed)—Plastic Canopy (Detail Molded)—Rubber Loop—Detail Picture Plan and 11 other parts.

Fellows! We Told You and Now You're Telling Us! Thanks for Your Letters!

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Build With These Parts—Three-Bladed Plastic Prop with Plastic Spinner—Plastic Pilot—Plastic Exhausts—Plastic Cowling—Prefabricated Fuselage and Tail Parts, in Full Color and Precision Die Cut—Monofoil Wing (Left and Right—Formed Plastic Canopy—Rubber Wheels—Complete Landing Gear—Three-Color Genuine Decals—Rubber Loop—Detail Picture Plans and 12 other parts.

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Have fun fellows! Keep on building Speedee-Bilt Models. Keep on writing us too and tell us how you like these snappy models. Dealers everywhere have Speedee-Bilt Models in stock. If no dealer in your neighborhood, order from address below. Add 25 cents for postage and shipment from nearby dealers stock.

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$9.95 completely assembled

The most sensational flying model airplane ever designed to be powered by a miniature engine. Powered by a powerful little 1951 "Spitzy" Sr. .045 engine. Completely assembled and ready to fly. It's very stable and easily flown by beginner or expert.

Beautifully finished in SILVER with AERO GLOSS . . . the FINEST hot fuel proof dope.

YES . . . You can buy it knocked-down & prefabricated with the 1951 "Spitzy" Sr. .045 engine. **$7.50**

YES . . . You can buy it knocked-down & prefabricated without an engine. Use your own engine. **$2.95**

ANOTHER "Spitfire" FIRST

1951 "Spitzy" Sr. .045 engine

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- Veco Rubber tires
- Plywood firewall
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- Pilot & bubble canopy
- Decals

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HEY KIDS

LOOK ...THE "Spitfire" DUST'R MODEL AIRPLANE SENSATION

"Spitfire" DUST'R

A true scale BI-PLANE. A really cute versatile little Bi-plane. The type used for crop dusting, stunting, and training NAVY pilots. Completely assembled and powered by the POWERFUL little 1951 "Spitzy" Sr. .045 engine. Beautifully finished in YELLOW & BLUE with AERO GLOSS . . . the FINEST hot fuel proof dope.

Yes . . . It is a real CROP DUSTER.
Loaded with flour or powder you can dust CROPS, FLOWERS, HEDGES, TREES, or anything you like . . . for FUN and THRILLS.

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Hands—should they sand and assemble? Or be skilled in all arts of model airplane construction? Here they soap a plan to prevent cement from sticking.

The Case Against prefabrication

by ROBERT L. HATSCHEK

The prefabbed model may be here to stay but that does not say your die hard old-timer has accepted it. You may not agree with what he has to say about prefabrication but you will agree that he has a right to say it.

Andy Peterson, well known coast builder and rubber-job expert, is typical of the breed of modeler who goes in for exacting construction of contest models.

(Editor's Note—Prefabrication is a hot issue. Prefabrication has contributed heavily to the growth of the hobby to what it is today and, in the eyes of many, is a good thing. But in the eyes of some serious contest modelers, it sometimes has its faults. The argument that follows is not necessarily the opinion of MODEL AIRPLANE NEWS. *The other side of the question will be presented in the next issue.)*

▶ For more time than this writer has been building models, and that is nearly 15 years, the aeromodelers of the world have worked mightily to remove the "toy" stigma which has been placed on model aircraft by the uninitiated. Hobbyists have worked and built and designed and tested and accomplished a great deal in this scientific sport and hobby.

BUT the plain fact is that, despite these many achievements, model airplanes are truly approaching the toy category! Today, anyone can go out and purchase a ready-built model which needs only to have the engine started to be thrown into the air. This is the unfortunate case in both free flight and controline. This is where our hobby is being taken by the current trend toward prefabrication!

To illustrate just how the tail is wagging the dog, let's look at the recent AMA questionnaire on rules. Here is one question that was asked: "Do you favor dropping the 'Builder of Model' rule?" The AMA had previously outlawed from competition any model which could be assembled by a few minutes of unskilled effort and now they ask us this question.

You may argue that if beginners were allowed to compete with factory built models they would have a better chance in competition with the experts. To be sure, it might start out that way, even if you disregarded the factor of adjusting ability, but it would soon descend to the point where the contestant able to pay for the better, more expensive models would be the (*Continued on page 61*)

"Spitfire"

ANNOUNCES . . . THE GREATEST MODEL BOAT SENSATION

THE "Spitfire" SPIT-CRAFT

The most beautiful engine-powered, all plastic, model speedboat ever made. Authentic in every detail to the CHRIS-CRAFT speedboat. With a beautiful BLUE hull and WHITE deck of IMPACT STYREEN PLASTIC. RED cockpits, detailed instrument panels, steering wheel, flags, lights, and every detail minutely shown. Powered by the easy starting POWERFUL ROYAL "Spitfire" .065 engine. Completely assembled and ready to be launched. 21 inches of undescribable beauty.

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RICH & LEAN

It takes all kinds of opinions to make the modeling world go round.

Is It Agreed?

Under *Scrap Box* in the August '51 issue of M.A.N., I read a paragraph devoted to an event originated by the *Aeronuts* at a contest last year. . . . Its object is to make the greatest number of one minute duration flights in one hour. I believe this event could have a great future. It would be especially useful in creating interest at contests held by small clubs. It would appeal to both contestant and spectator alike. . . .

It seems no matter what the current fad may be, my greater interest lies elsewhere. At present, AA's are the rage. I like them; in fact I have several. But am now gleefully trying to keep my *Playboy Sr.* in sight for ten minutes. Another point in favor of the One Hour event, plenty of competition! Honestly, I think it is worthy of more investigaby M.A.N.

Incidentally, M.A.N. has been my modeling bible for many years now and shall be in years to come.

S/Sgt. Louis Poirrier
c/o P. M., San Francisco, Calif.

Super Slipstream

I would like to beg some information from you: concerning pix of Grumann *Skyrocket powered by two M-5's* . . . could you advise me where to get plans or kit for such a model?

By the way, this *M-5* is an elusive character. I ran one down way out h'yar in Indian territory. The Silver Garter saloon down at the agency in White Eagle had bolted one to the ceiling and were using it for a fan. I had to swindle the manager for an hour and wound up with two buckskins in the deal. Am now tracing down another one. . . .

I like your copy and the pix are clear and good.

Frank J. Hicks
Ponca City, Oklahoma

Wakefield Not for Beginners

The Wakefield Contest is supposed to determine the best rubber models in the world each year. Perhaps it doesn't do this, but anyhow it comes very close. . . .

Do you honestly believe there are a large number of beginners in this country that can design a good Wakefield? We don't.

Why go out of our way to please a nonexistent group? What we want to do is send the best team possible to fly in the Wakefield finals. We can't do this by pampering a bunch of twelve year olds. England, France, Italy, and all the others aren't going to do this, so why should we? Also, since the Wakefield isn't to see how many can build and fly this type of model, why simplify the rules? We don't want to push the beginners or juniors down, but we believe that they are babied enough now.

We further believe that this morning and evening flying is a good thing. Admitted that there are thermals at 6 AM and 6 PM, but the percentage of them is extremely small compared to those at noon. Seems to us if a beginner has the ingenuity to build a top-notch Wakefield, he can certainly work out some kind of scheme to get out on the field at 5:30 AM. Your idea of five or six flights is fine, but they still should be held in the early morning or late evening. . . .

We say leave the Wakefield alone.

Gene Tempelmeyer & Martin Barylski
St. Louis, Missouri

Sure Fire was Sure Fire

Frank Ehling's *Sure Fire* (April 1950 M.A.N.) design makes the best AA contest plane I've ever seen! My *Wasp*-powered job won the open AA event at the *Starduster's* meet at Woodburn Airport on June 10. It grabbed thermals like crazy—even at low altitudes. The time was 23' and it could have done 30' if I had been better acquainted with the ship. The climb is straight up with full power and a *steady* floating glide ensues. Am now building a scaled up version for new *Torp 19*. Thanks for a fine model!

Don Santee
Salem, Oregon

And More to Come

Just a line to compliment your decision to provide full size working plans of this sort and wish you had had them 20 years ago as that's about how long I've been subscribing to M.A.N. In fact, I have a few copies as far back as '29 when there used to be fiction stories included.

I have a small workshop over the garage and am selling some supplies here for the modelers around here. Canton is a small town, 600 population, more or less, so you see I don't sell too much.

Bob Bartlett
Canton, Maine

World's Smallest Ornithopter?

For years inventors have been trying to build an ornithopter large enough to carry a human pilot. I have been doing the opposite. The smallest flying model I have yet produced is a microfilm ornithopter with an overall total wing span of 25/100 (1/4) inch. Power is supplied by a copper wire .0003 O.D. held under tension to the flapping mechanism. To fly the gnat I heat the copper wire with a pen cell. When the wings stop flapping from the expansion of the motor, I release the model which gains eleven to twelve inches altitude over a distance of 36 to 42 inches, depending on the coldness of the room. When the flight stops, it stops. No glide, just spin, onto a piece of black paper.

Martin R. Schaedla
San Carlos, Calif.

Rising Son

I'm 20 years old now and am a dyed-in-the-wool model airplane fan. Believe me saying that I started making models at the age of six. I had three brothers who were also crazy about models but all of them became pilots and two were killed in the war as the *Kamikaze* suicide pilots on famous *Zero* fighters.

Making and flying models became very popular in Japan, especially after the war, when U-control method was introduced. . . .

I'm making the model of Convair *XF-81* and I expect it'll come out alright.

Yoshinoku Sekiguchi
Yokosuka, Japan

We Want Scale Gas

This letter is written in comment on the very excellent meet by the *Screamin' Demons* of Long Island at Hicksville on Aug. 19. They ran most of the usual events and a few unusual ones—of particular note were the events for AA ROW and AA Flying Scale . . . There are, however, no flying scale gas rules and I am one of a growing number of modelers who think there should be some.

This was the first meet in this area since about 1941 or 1942 which has included such an event but this one differed in that it was limited to AA engines, not available then . . .

I understand that there was quite a bit of favorable discussion at the Nationals on the subject of adopting this event for AMA competition. I would like to go on record, along with several other members of the *Prop Spinners* Club, as being definitely in favor of such a move and I would also like to make a few suggestions . . . The rules we flew under placed equal stress on flying and the model itself. Points were awarded as follows: 100 points maximum for duration from ROG with 20 sec. run; and 25 points maximum each for fidelity to scale, amount of detail, workmanship and finish, making a possible total of 100 for the model. The models were judged against each other by three modelers (*Screamin' Demons*) who kept their point awards secret until judging was completed. Then their individual scores were averaged to give each model its points.

Flying was done *after* judging and was scored in the following manner: Models had to ROG with 20 sec. engine run and do 40 sec. duration. Without doing this they could not even receive scale and workmanship points. Then, the longest duration of one flight was given 100 points and each following flyer was given that percentage of points which his time was of the high man's. For example: If the winner did 150 sec. and second place flyer did 100 sec., then they got 100 points and 67 points, respectively.

This flight qualification had to be accomplished within only TWO attempts! An alternate method of qualifying was to hand launch the model with a 15 sec. engine run and do 40 sec. In this way, the flyer was given only 5 points for flight but his scale points would also be counted.

All in all, these rules are excellent with but a single exception. Two attempts aren't sufficient. Many may pooh-pooh this last statement of mine but please realize that this was an unusual event and all the ships were built for it without the modelers knowing the rules in advance. All we knew was that models would be judged on both scale and flight and most of us assumed that AMA free flight rules would be used. It is too easy to miss a 40 sec. flight in two tries . . .

Perhaps three or four attempts should be allowed. Such a requirement is necessary but it should be softened somewhat at least until modelers get acquainted with scale flying to the point where they can be more consistent.

We definitely feel that an engine displacement limit of .05 cu. in. should be placed on this event. This is because of the versatility of models that is permitted by small engines and because larger ships would be tougher to fly, more to lose and, when properly flown, tough to compete against for those who did stick to the smaller engines. The popularity of AA could be picked up almost bodily if the scale event were limited to these engines!

Judging each model against its competitor is definitely the best way to award points for scale, etc., but a standard pattern should be adhered to. That is: So much should be lost for excess dihedral, increased tail area, struts left off, ad so forth; also a standard number of points should be awarded for opaque color--dope finish, completely cowled engine and the like.

Bob Hatschek
Bayside, N. Y.

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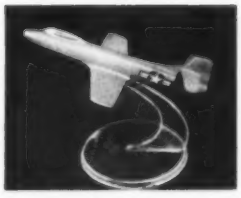

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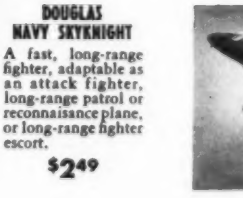

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We Test the Flash

(*Continued from page 25*)

leading edge radius in—powered flight is speeded up tremendously thereby. The novice should retain the shape as is—we did—and be plenty satisfied with the climb. Don't omit the gauze over leading and trailing edge dihedral breaks—its strength is tremendous. This also goes for the firewall and for the tail rubber hook as well.

One important point re the wing and tail assembly: while assembly is simple and speedy without spars to install, the wing and tail are quite flexible until covered. This means that they're susceptible to warps, so every precaution should be taken in cementing parts together to see that all parts are flush with the surface on which one builds. Pre-cement all end grains as for the fuselage crosspieces and sand to remove bumps, which are a menace to smooth airfoils and which so often produce wrinkled covering. Those who doubt the strength of sparless wings are assured that Jasco knows what it's doing—the sturdy leading and trailing edges are not only sufficient to withstand flight loads, but also are actually stronger than required for normal flight as a margin of safety.

One word on covering—make the edges wrinkle-free. Although the Jasco paper can be used for wet covering, we used it dry, since there are no compound curves to worry about. A light water spraying once it's in place will pull it up nice and tight. In order to further strengthen the wing center, which transmits all flight loads, we double covered this section top and bottom. This consisted of covering out to one rib on either side of the center wing rib, water spraying it and allowing the paper to dry, then covering the entire wing. The weight added is practically nil but strength is almost doubled.

Make every effort to apply the paper evenly. While shrinking is even in all directions, practically speaking, the paper isn't absolutely perfect—nor is either a human being or a model builder. Those with experience will probably do an adequate job, but the beginner may get a warp or two here and there. For this reason, we earnestly recommend installing the aileron adjustment tabs. Besides, it's a darned good way of learning what effects different warps have under power and in the glide.

After covering and water spraying, the model when dry is ready to clear dope. Warning: handle parts by the edges until doping is completed—the paper by itself is weak until doped. Further, finger tips make dents which don't always come out. Usually, dope comes too thick and must be thinned out for best results. Those with a paint sprayer know how thin the dope must be; for those intending to brush it on, the dope should be thinned to the consistency of maple syrup—it's closer to molasses before thinning. We used a little over a half-pint of thinned dope for three coats on wing and tail and five coats on the fuselage. Add five drops of castor oil to a pint of thinned dope, whether for spraying or brushing. This plasticizing does two kinds of good—it prevents excessive shrinking and helps prevent blushing. The shrinking propensities of the paper furnished are tremendous, and it's possible to get the covering *too* tight. This results in a sag between ribs so that the airfoil shape is wrecked. To the uninitiated, blushing is the result of absorption of water from the air. This takes the form of white patches which lie on top of the paper fibers rather than penetrating—hence, weak covering. Castor oil slows down the drying process, which in turn inhibits water absorption.

It's all a matter of relative air and dope temperatures into which we won't go here. Try to pick a dry day and place to do your doping. Get a brush about an inch wide, as soft as is obtainable, and make every effort to spread the dope evenly. If after drying a light filmy blush appears, it can be removed by lightly brushing on thinner and holding the part over a warm radiator until dry. Watch out for warps when doing this, though.

Our pylon and rudder have three coats of Testor's *Sanding Sealer* with a light sanding between coats. What with glow fuels and their disastrous effect on unprotected doped surfaces, fuel proofer was applied to cover vulnerable surfaces. Tried Jasco's for this—it's very effective. Only raw fuel need be considered; the exhaust, while oily and dirt-catching, has no harmful effect if cleaned with a rag and alcohol (rubbing alcohol will do) after each day's flying. We fuel-proofed the entire fuselage—mainly to make it look pretty—with an e- 'ra coat around the eyedropper, firewall and rest of the nose forward of the pylon. The latter was fuel-proofed just to cover, as was the under side of the double covered wing center section.

When checking the way the stabilizer rested on the fuselage, it was noted that not very much of a "stop" was provided at the leading edge to prevent the stab sliding forward, so we took a small section of trailing edge left over and cemented it to the fuselage, narrow edge forward, just ahead of the stabilizer. Keying the wing and tail in place as shown on the plan, is a big step in eliminating a source of trouble or even disaster. To be sure that the wing is straight, tie a length of thread to a pin, sticking the latter in place just forward of the leading edge of the rudder. Shift the wing until the distance from the pin to the trailing edge at each tip is the same, then cement the split dowels in place. Line up the rudder before keying the stab, getting it as close to neutral as possible. This model's rudder is merely a vertical stabilizer, turn being achieved by tilting the stabilizer. As a final check, place the model on a table with the end of the eyedropper off the edge to prevent damage. First, measure the height of the leading and trailing edges above the table top; the leading edge should be higher than the trailing edge by the exact amount as shown on the plans. We "guesstimated" the stabilizer tilt—and were lucky enough to have it just right for our particular model. Although the amount will vary from model to model the stab is relatively small and changes in tilt are therefore less critical. The left stab tip, as seen looking from back to the ship forward, should be about 1/2" higher than

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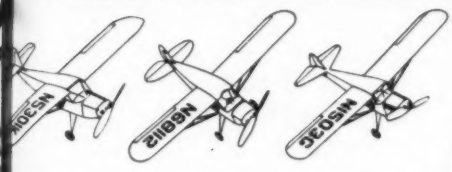

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the right tip to start with. Our final difference is 7/8". Make sure the engine is straight, pointing neither up, down or to either side.

If the foregoing procedures have been faithfully followed, only test gliding remains before flights are attempted. This consists of holding the fuselage at the balance point with the nose pointed *slightly* downward, trotting with it until it's felt rising from the hand and giving it a gentle push, aiming it at a point about 75 feet ahead. Do this over soft, long grass, just in case. The glide should be smooth above everything else, with just a *slight* tendency to turn left. If the model doesn't seem to float out like a gliding albatross, don't worry—just so long as the path is smooth. A gentle rise is okay, if the tail tends to rise, too. If, however, the nose goes up and the tail drops, and if you have previously checked to see that the wing is set at the right angle, try a few times more. If the nose-up is consistent, add weight to the nose until the glide is smooth. Under no circumstances should the trailing edge of the wing or leading edge of the stab be shimmed up, since it results in loss of longitudinal stability, making the model dive into the ground under power or immediately after the engine stops. Shimming up the trailing edge of the stab, however, is recommended to correct a diving tendency. The slightest of changes in the attitude of the model when released or in its speed when released can make the test glide vary; hence, it's best to try it about a dozen times or so before making any adjustment changes. Try to make changes in as small increments as possible until the desired effect is achieved.

Four or five seconds engine run will get this model high enough to observe the glide. Subsequent adjustments will be obvious, we think, but remember to take it easy. First flights should be made with a high pitch prop—we used a 5-1/2-4 *Kaysun* on the .049; a five in. *Kaysun* is recommended for smaller engines. Experiments made later with three in. pitch props showed that a lower pitch straightens the climb out, causing a loop rather than the nice, steady spiral obtained with the higher pitch. There should be no danger winding in with the smaller engines; but if you've an .049 take it easy at first. Use *Supersonic 100* as we did at first to keep the revs down, graduating to the hot fuels after power adjustments are fairly well set. Leave the left aileron neutral, but turn the right one down about 1/16" to begin with. This prevents the inside wing dropping during the climb to the right and the ship spiralling in under power. Our right wing panel, without aileron, is washed in 1/16" at the poly break with the result that the ship spirals up with the inside wing *high*. This adjustment is a positive guarantee against winding in. When adjustments are right more engine run can be used, but use that dethermalizer! Our favorite fuse material is soft indoor clothes line soaked in a glass of water containing three tablespoons of saltpeter and two tablespoons of alcohol as a wetting agent. When dry, the line will burn at a consistent 1-1/2 minutes per inch. Don't forget to use it—this job is a thermal catcher for sure.

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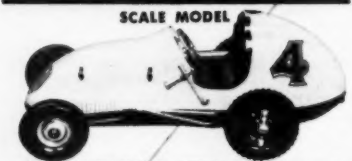

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Little Joe

(*Continued from page 20*)

the sheets. When these have dryed, cement the two bulkheads in place and temporarily mount the engine. With this done, cement the top and bottom blocks lightly in place. Carve them to shape, remove, and hollow out the top rear and bottom ones as indicated on the plans. Set aside the top front block until the wing is built. Cement the centering peg crosspiece in, cut the wing tie-down crosspiece out and make a nut plate for it as shown on the drawing, but don't cement it in place yet. Cut a section out of the bottom block and use it as a pattern for the contour of the hardwood drop gear retainer block, which is glued in its place. Drill two holes in this block for the gear prongs and bush them with brass tubes. Be sure the holes are *parallel* or your gear will never drop properly. If you have access to a drill press for this job, by all means use it. Now fair the nose in around the spinner. You will note here that some fill-in is required since you will cut away some side sheet when you fair the nose in. Use scrap blocks for fill-in material.

Make a fuel tank and install it very solidly. If you follow the dimensions on the drawing, you will have a tank which requires the engine to be set rich for take-off so that, after about 30 laps, it will lean out for a peak ten to fifteen laps. This was done purposely to allow lower speed first laps to feel the ship out before it really got going. Despite the rich mixture you have plenty of power and will cruise around at about 75 mines per hour. If you desire peak power from take-off, build your own speed tank using the data given in May 1951 MODEL AIRPLANE NEWS.

Now to have a really rugged ship, cover the fuselage with gauze—the common first aid type—and paint it with Aero Gloss cement until a light sanding leaves a very smooth surface. Aero Gloss should be used since a few belly landings will wear away a little of the top coat and expose non-fuelproof cement, if a fuelproof top coat is used over such cement. Before leaving the fuselage, install the 3/32" belly skid wires. If you're flying off grass, you may use a plywood tail skid but if you're on bare ground, asphalt or concrete, use a wire one.

TAIL—Cut the stabilizer and elevators from 1/8" hard sheet balsa. Sand them to a typical symmetrical airfoil section and install the hinges and elevator control horn. A simple, fool proof and very rugged hinge is shown on the drawing and is recommended. Cut out short stripes of tin and bend them around a 1/32" wire, pinching them tightly with pliers. Now use the next smaller size wire as the actual hinge wire. You may attach your favorite control horn but anchor it by sewing it and cementing it to the elevators. Attach the elevators to the stabilizer, cut a notch in the aft fuselage, insert the stabilizer and cement profusely in place.

The fin and rudder are in one piece cut from 1/4" hard balsa sheet, as is the dorsal fin. For those of you who wish to leave these parts off as do the latest speed airplanes, a word of caution. Your take-offs can get rough without the fin so don't risk it now. When you get to a hot speed ship you'll get lots of practice at trying to avoid rolling up the lines on take-off so leave well enough alone and cement this roll-up insurance in place. Needless to say, you will have to fit up the notch in the rudder to give close clearance around the elevators. Allow free and full elevator movement while cutting away a minimum of wood. You may beef up the tail by covering it with *Silkspan* and doping freely.

WING—Construction of the wing is unique and simple. All the wing parts except the tips are cut from 1/16" hard sheet balsa. The control mount is 1/8" hard wood and the wingtips are cut from scrap block. Lay out the bottom trailing edge and leading edge pieces and pin them down firmly. Prop up the leading edge lower sheet with 1/16" scraps and pin down the rear edge. Now cement the lower cap strips, ribs, and the control mount in place. When they are dry, cement the top sheet of the leading and trailing edges in place and then add the top cap strips. Add the wingtip blocks and sand the entire frame as indicated on the drawing.

Make a bellcrank as shown on the drawing and fit it into the wing. It is a close fit and will require trial and error fitting. Be sure it moves freely with both finger tip pressure and with a reasonable pull. Now, using as a drill a piece of music wire spinning between your fingers, bore holes through the wing right hand panel for the lead out wires and insert brass tubes through to rib #2. Cement the tubes heavily at each rib through which they pass and at the wingtip block. Now install the bellcrank, with lead out wires and specially bent push rod attached, to the control mount using an 8-32 bolt cut off to proper length. Cover the wing with *Silkspan*, wet it to draw the *Silkspan* up tight and paint on a couple of coats of clear dope.

Fit the wing into the top front fuselage block snugly and cement the two firmly together, using the cement liberally. Place the hold-down crosspiece temporarily in the fuselage. Line it up under the wing control mount piece. Set the wing and top block on temporarily and drill a 1/8" hole through the top block, control mount and hold-down piece. Remove the wing and mark the position of the hold-down crosspiece. Now pull it out, bind the nut plate on the underside to match the drilled hole and cement it back in its marked position in the fuselage permanently. In the hole in the top block, insert a metal eyelet so your hold-down bolt won't go through the balsa. When fitting the wing on the fuselage to drill this hole, locate and glue the aft and center section centering pegs. Coat the forward inside of the fuselage with fuel proof dope and paint it silver with Aero Gloss. Mount the engine permanently with 3/4"-4 wood screws and cut out the hole in the fuselage for the needle valve. Next, complete the power installation by connecting the needle valve fuel line to the tank with a piece of neoprene tubing. Hook up the push rod to the elevators and you're ready to paint.

While a couple of coats of fuel proof clear dope are drying, make a drop dolly and gear lock. To fly with fixed gear it is only necessary to fasten the gear lock into position over the top drop dolly crosspiece with a wood screw driven into the fuselage gear block retainer. The tubes and block take all the abuse so don't worry about the frailty of the lock. It's only there to make sure the gear is in position to take it.

FINISHING—So much has been written on this subject that we won't go into details except to say that a lot of clear dope will yield a very rugged airplane without more then a negligible weight increase. Achieving a high strength to weight ratio in speed type airplanes is very important so take the time to apply a fine finish of increased durability, added miles per hour and slick appearance. Color scheme is up to you although orange is best from a visibility standpoint for the timer during a clocked flight. The original ship was colored blue and yellow principally for the sake of photographic clarity and it looks very sharp. Adding racing numbers takes only a moment but does wonders to dress it up.

FLYING—The original flew exceptionally well right off the board. It takes off easily with a little up elevator to keep the tail down and flies in a perfect groove. Over 50 flights have been put on the ship and the results are well worth talking about. It has been flown by six different flyers from the Buffalo *Bison's* club and they all agree that it is an extremely easy ship to handle. Using a 7-9 Power Prop and O & R #2 fuel it clocks a consistent 101 mph. Using a hotter racing type fuel with the same prop, it does a consistent 107 mph. These speeds are recorded in still evening air. And it even has a contest place to boast of already: a 101 mph third place at the Rochester, N. Y. Plymouth Meet June 17 of this year, flown by Harry Keller of the *Bisons*.

There is very little we can add about the flyability since it flies just like your favorite sport ship, but somewhat faster. That's what it was designed for so here is your best bet to break into speed the best way. THE END

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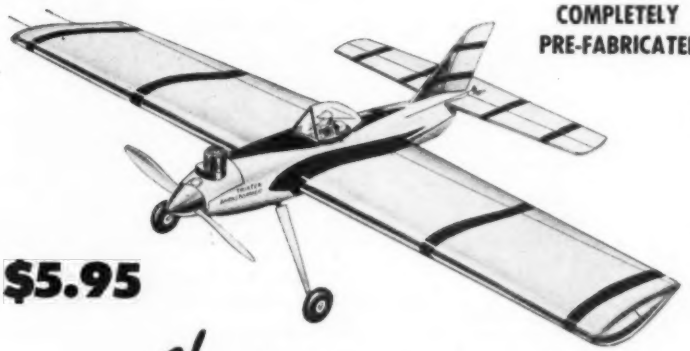

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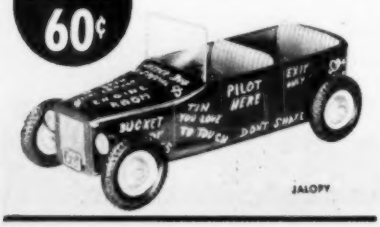

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AMA News

(*Continued from page 34*)

of the Semi-finals.

Entry fees will be $3.00 for Open flyers, $1.00 for Seniors and 50¢ for Juniors. This year the money collected from entry fees paid contest expenses and all but a very small portion of sending the team members from their homes to New York and back.

For more detailed information, write to your nearest Wakefield Committee Member. Wakefield Committee: Ed Lidgard, Chmn., 814 Bryan St., South Bend, Ind.; Wm. Fletcher, 8708 Grand Ave., Elmhurst, L. I., N. Y.; and Dick Everett, 4621 55th St., San Diego 15, Calif.

1952 PAA Rules Now Being Formed. George Gardner, Educational Director of Pan-American World Airways, is now in the process of gathering the opinions of model builders all over the country as to what changes should be incorporated in the PAA rules, if any.

There have been a number of suggestions for the Clipper Cargo and PAA-Load events already. Some think that Clipper Cargo models should be required to carry a "dummy" as AA PAA-Load models do and many are of the opinion that some means should be devised to cut down the flight time in regular AA and AB PAA-Load models by increasing the required weight of the "dummies." What do you think? You can have a voice in forming PAA rules by writing George Gardner, Educational Director, Pan-American World Airways, 28-19 Bridge Plaza North, Long Island City 1, N. Y.

New International Records. The Federation Aeronautique Internationale information circular number 55 lists three new records set under F.A.I. rules.

Flying Wing Glider, Duration—1 hour, 16 minutes, 32 seconds. Record set by M. Boris Mourastchenko (Russia) on June 6, 1951.

Flying Wing Glider, Distance—33.36 Kilometers (20.729 miles). Record set by M. Boris Mourastchenko (Russia) on June 6, 1951.

Orthodox Gas Model, Control Line Speed, Class I—126.840 kilometers (78.815 mph). Record established by D. Jose Gogorcena Azategui (Spain) on April 8, 1951, using a motor of 2.34 cc. displacement.

National Records Pending. *Jet Models, Control Line Speed, Open*—155.17 mph. Flight made by Thomas P. Baker, Kings Mtn., N. C., on July 8, 1951, using his original designed *Devil Dart* and a *Dyna-Jet* engine.

Outdoor Unlimited Rubber Models, R.O.W., Open—7:08.0. Flights made by Edward O. Slobod, Hollywood, Calif., on August 5, 1951. Ed's model, an original design, had a fuselage length of 41-1/2", wing span of 42" x 5" chord, elevator span of 17" x 4" chord, and a box fuselage. Wing airfoil section was a N.A.C.A. 6412 and elevator section was a 9% Clark Y. The three floats used were equal sized with two mounted in front and one in the rear. Prop used to power the 9 oz. model was an 18D x 29P free-wheeler powered by 20 strands of 1/4" rudder 56" long.

Towline Gliders, Class D Senior—30 minutes. Flights made by Murray Feigenbaum, Brooklyn, N. Y., on June 17, 1951, using an original designed model.

Free Flight Gas Models, R.O.W., Class AA Senior—5:18.8. Flights made by Christopher Denny, Pasadena, Calif., on August 5, 1951, using a *Wasp* powered *Fubar* and a *Tornado* 6D x 3P prop.

Free Flight Gas Models, R.O.W., Class A Junior—7:43.3. Flights made by Don Tune, Los Angeles, Calif., on August 5, 1951, using an Arden .099 powered original design. Don's fuselage gives the resemblance of a *Zeek* and has a wing with a 40" span by 6-1/2" chord. Elevator span is 17-3/4" x 4-1/2" chord. Float arrangement is one large front float and two smaller tail floats. Prop used was a Garday 8D x 4P.

Free Flight Gas Models, R.O.W., Class C Senior—4:11.0. Flights made by Gene Wallock, San Gabriel, Calif., on August 5, 1951, using a K & B .32 powered *Sandy Hogan* with a Garday 10D x 5P prop.

Outdoor Unlimited Rubber Models, Junior 7:29.2. Flights made by Ronald Nowicki, Detroit, Mich., on July 28, 1951.

Wakefield Rubber Models, Junior—7:17.6.

Flights made by Don Tune, Los Angeles, Calif., on July 27, 1951, using an original designed model weighing 9-1/2 oz. Model was powered by 16 strands of 1/4" black rubber 48" long.

Wakefield Rubber Models, Senior—6:40.4. Flights made by Otto Heithecker, Detroit, Mich., on July 27, 1951.

Towline Gliders, Class C Junior—1:45.6. Flights made by Arnold Fischer, Childress, Texas, on July 24, 1951.

Towline Gliders, Class C Senior—1:08.6. Flights made by Harry Robertson, Phoenix, Ariz., on July 24, 1951.

Towline Gliders, Class C Open—10:00.0. Flights made by J. W. Chandler, St. Paul, Minn., on July 24, 1951, using a *Sailwing* 50.

Towline Gliders, Class D Junior—12:03.2. Flights made by James Watson, Ft. Des Moines, Iowa, on July 24, 1951, using a *Floater*.

Outdoor Hand-Launched Gliders, Class A Junior—6:44.7. Flights made by Gene Jackman, Oklahoma City, Okla., on July 25, 1951, using a model designed by Ray Matthews.

Outdoor Hand-Launched Gliders, Class A Senior—16:44.6. Flights made by Bob Brawner, Phoenix, Ariz., with an original design.

Free Flight Gas Models, R.O.W., Class AA Junior—3:51.9. Flights made by Jan Lowe, San Diego, Calif., on July 26, 1951, using an original design weighing 7-1/2 oz. and powered by a *Wasp .049* and a 5-1/2D x 4P Garday prop.

Free Flight Gas Models, R.O.W., Class AA Senior—4:00.4. Flights made by Clifford Gheen, Detroit, Mich., on July 26, 1951.

Free Flight Gas Models, R.O.W., Class AA Open—12:05.0. Flights made by Robert J. Dunham, Tulsa, Okla., on July 26, 1951.

Free Flight Gas Models, R.O.W., Class A Junior—2:59.4. Flights made by Don Tune, Los Angeles, Calif., on July 26, 1951, using an original design weighing 11 oz. and powered by an Arden *.099* and a 8D x 4P Garday prop.

Free Flight Gas Models, R.O.W., Class A Senior—11:27.0. Flights made by Edward R. Mate, Chicago, Ill., on July 26, 1951, using an original designed model powered by an O.K. *Cub .09* and a Top Flite 7D x 4P prop.

Free Flight Gas Models, R.O.W., Class B Junior—4:11.8. Flights made by Bill Lofland, Abilene, Texas, on July 26, 1951.

Free Flight Gas Models, R.O.W., Class B Senior—6:44.4. Flights made by Gary Kirst, Springfield, Mo., on July 26, 1951, using a Forster *.29* powered *Sandy Hogan* and a Top Flite 10D x 6P prop.

Free Flight Gas Models, R.O.W., Class B Open—7:31.0. Flights made by Sgt. James A. Summersett, Jr., El Paso, Texas, on July 26, 1951.

Free Flight Gas Models, R.O.W., Class C Senior—3:32.0. Flights made by Jack K. Emery, Monrovia, Calif., on July 26, 1951, using an original design powered by a McCoy *.49* and a 12D x 4P *Rev-Up* prop. Model weighed 56 oz.

Gas Models, Control Line Speed, Class B Junior—127.29 mph. Flight made by Alfred Davis, Birmingham, Ala., on July 25, 1951. Model used was a design by Herbert Davis which was powered by a Dooling .29 and a 7D x 9P *Tornado* prop, and featured a metal bottom.

Gas Models, Control Line Speed, Class B Open—136.98 mph. Flight made by Anthony Grish, St. John, Ind., on July 25, using an original design.

Gas Models, Control Line Speed, Class C Senior—137.51 mph. Flight made by Jack Friedland, Oakland, Calif., on July 27, 1951, using an original design powered by a McCoy *.49* and a 8-1/2D x 11-1/2P Tornado prop. Outstanding features of Friedland's model were a half-pan of cast aluminum and metal wings.

Gas Models, Control Line Speed, Class C Open—136.88 mph. Flights made by Lee A. Hill, Corpus Christi, Texas, on July 27, 1951, using an original design. Hill's model had a wing span of 16", overall fuselage length of 20-1/4", and weighed 22 oz. Power was a McCoy .49 with a 8D x 10P original prop.

Gas Models, Control Line Speed, Class D Junior—148.88 mph. Flight made by Harry J. Fiegel, Texas City, Tex., on July 28, 1951. Harry's model, an original design, was powered by a McCoy *60* and a 9D x 10P *Tornado* prop. Design featured a *Hell Razor* mag-

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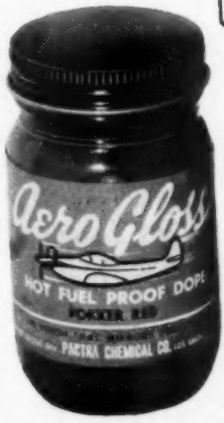

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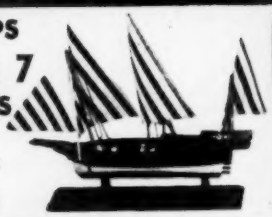

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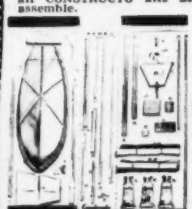

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nesium fuselage bottom, wing span of 18", and overall fuselage length of 17-1/2".

Jet Models, Control Line Speed, Senior—142.63 mph. Flight made by Herbert L. Davis, Birmingham, Ala., on July 29, 1951, with an original designed model powered by a *Dyna-Jet* and weighing 21 oz. Wing span used was 16" and overall fuselage length was 24-1/2". The fuselage was made of balsa with the nose hollowed out for the tank.

Election of Ama Officials Underway. If you're an AMA license holder in good standing and haven't received a ballot for election of officers and contest board members, write today to AMA, 1025 Connecticut Ave., Washington 6, D. C. *It is important that every license holder votes!*

Miscellaneous. Always on the lookout for new ideas to improve the running of contests is the AMA and its Contest Board. Paul Ring, Minneapolis, Minn., has come up with at least a partial solution to avoid missing the one lap which is occasionally missed when timing control line speed flights. The lap is usually missed because the timer counts "one" when he starts his watch and so on until the last lap when he counts say "six" for Class D and stops the watch actually only clocking five laps. According to Ring, this situation could be remedied if the timer says "zero" when he starts the watch. Incidentally, Ring instructed the timers at the recent 4th Annual Minnesota State Championships to start with "zero" and reports that not one case of miscounting was reported.

Accidents, no matter how minor, are detrimental to model flying as a whole and add up to fewer contests, fewer flying sites and, in general, less flying. This brings us to the safety ruling of the *Western Associated Modelers* as follows: "No model airplane, glider, or gas motor powered model airplane shall be launched in free flight less than two hundred feet from the nearest automobile, building, or designated spectator area." Whether you are a member of the W.A.M. or not, you can be assured that their ruling is worth following.

CONTESTS

OCTOBER

6 & 7—*Woonsocket, R. I.* Class AA Flying Fools' Fair for OR, FFG, CL, CLS, and TR. Thaddeus W. Wenclawik, Contest Director, 58 Providence St., Woonsocket, R. I.

13 & 14—*Los Angeles, Calif.* Class AAA All Western Open Model Aircraft Meet for indoor, outdoor free flight, and control line events. Tom U. Engelman, C.D., 2458 Heliotrope Dr., Santa Ana, Calif. Pending.

14—*Bakersfield, Calif.* Bakersfield Record Trials for FFG. Francis Stewart, C.D., 900-21, Bakersfield, Calif.

21—*Visalia, Calif.* Visalia Model Airplane Assn. Record Trials for FFG. Emory O. Hull, Jr., C.D., P. O. Box 284, Ivanhoe, Calif.

NOVEMBER

11—*Bakersfield, Calif.* Bakersfield Record Trials for FFG. Francis Stewart, C.D., 900-21, Bakersfield, Calif.

18—*Visalia, Calif.* Visalia Model Airplane Assn. Record Trials for FFG. Emory O. Hull, Jr., C.D., P. O. Box 284, Ivanhoe.

DECEMBER

9—*Bakersfield, Calif.* Bakersfield Record Trials for FFG. Francis Stewart, C.D., 900-21, Bakersfield, Calif.

16—*Visalia, Calif.* Visalia Model Airplane Assn. Record Trials for FFG. Emory O. Hull, Jr., C.D., P. O. Box 284, Ivanhoe.

28, 29, and 30—*Orlando, Fla.* Second Tangerine Internationals for OR, TLG, OHLG, FFG, Rubber Flying Scale, RC, CL, CLS, CLFS, and TR. For information write to Tangerine Internationals, P. O. Box 123, Orlando, Fla. Pending.

AUGUST, 1952

3—*Waynesboro, Pa.* Pending.

SEPTEMBER, 1952

21—*Waynesboro, Pa.* Pending.

Key to listing of events: FFG—Free Flight Gas; CL—Control Line Speed; OR—Outdoor Rubber; TLG—Towline Glider; IR—Indoor Rubber; OHLG—Outdoor Hand-Launched Glider; IHLG—Indoor Hand-Launched Glider; CLS—Control Line Precision (Stunt); CLFS—Control Line Flying Scale; RC—Radio Control; TR—Team Racing. THE END

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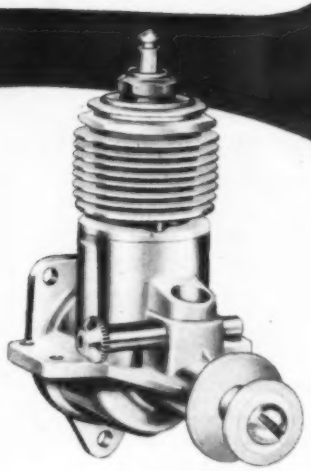

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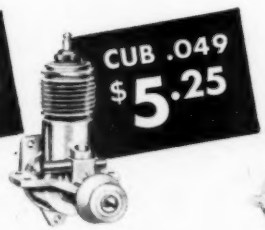

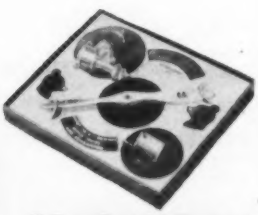

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What Happened at Dallas?

(Continued from page 19)

You've got to work to win, even the day before the flying.

Midnight bull session with Lew Mahieu about a new swept-wing speed job, and his cabin free flight design to replace the *Zeke* . . . talks with Gilliam, who really wowed the boys with *Civvy Boy's* climbs, and about a beautiful AA he flew. Was out to show them this time. Seems his ships were designed for ignition, then longer noses for glow had made them touchy. Short noses this year and did they go up! Prop under leading edge and you're o.k. . . . Ray Matthews. Said hello about 15 times for days on end as he passed us on the sprint after some departing model. And you wait all year for this chance to chew the fat . . . Frank Ehling and Ted Grzeszczak with a huge box full of untested ships. Frank got a Payload first as usual . . . Long chat with Lew Andrews and his Senior Class traveling companion, Don Ferguson. Two of them flew in from Massachusetts to compete in stunt and each got a first. Guess what they were flying? Talk ended in a real laugh when Fox's Zimmerman divulged the theft of three cans of fuel. That fuel was 60% hot stuff for mixing purposes. Some jerk melted an engine and it serves him right.

Arthur Godfrey and Jim Walker flying Jim's rc ship. Hard to say who stole whose show. Anyhow, Godfrey amazed Jim with his ability to fly models as well as big stuff. Once he made a steep climb, nosed over before losing altitude and speed, then held back stick to fly level off the top. Walker said he could hear the clicks in the control box! Army boy named Tyler entered sport job with an Arden .19 in rc. His first rc contest. Didn't look threatening but he was a real model contestant and brought the old free flight try to radio. Made near 30 flights and caused even Walker to remark that he never knew so many points could be run up on rudder only . . . Howard Bonner, who makes those gorgeous escapements, had a beautiful cabin job that flew like a bat out of blazes with a *Torp 19* flat out . . . And Bill Butler who has been round a long, long time, flying a sensitive ship that would make your tongue hang out . . . R.O.W. gets us. Some ships dunk but most get off for real hot climbs, just like they had wheels. Reason it gets you is because, when things are hottest, some guy in a bathing suit goes after a model, then floats around in that cool water for an hour or two. There ought to be a law.

George Gardner with Dallas Sherman, the payload man. Dallas is quite a man, a wheel in PAA's Tokyo branch. He knows whereof he speaks and had a cautious, fact finding approach for new rules. Spent much of one afternoon with a few builders flying different loads on unassisted take-offs to ascertain the type of performance that resulted with different weights. Dummy to be an ounce heavier next year. George and Dallas fluttered around payload like a couple of mother hens.

Bob Lutker, whose churning little team racer beat all comers, turned the carrier event into an uproar by entering as SE-5. What a mix-up. Big argument over whether it had been in our service. How come British roundels, then, asked someone. Bob protests before flying. Gets penalized 100 points. Then wins anyway. Sterling kit *SE-5*, by the way, and the way Lutker did wing overs, really vertical dives right at the carrier, with sharp pull-outs just off the deck, really tickled the crowd. Maybe the Navy doesn't do it that way but it was fun.

Twilight flying of rc jobs at nearby field. Long, leisurely flights, quiet glides and spot landing after spot landing with ships rolling right up to the starter's hand. Why can't

(Continued on page 52)

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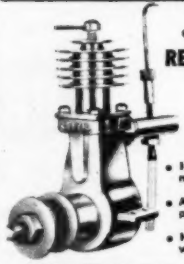

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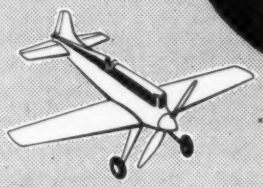

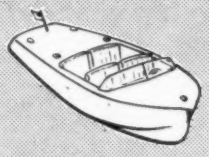

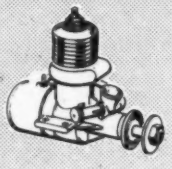

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5	1/2	5/8"	1-1/16"	1-1/4"	up to .23	39c
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7	2/3	1"	1-1/2"	1-1/4"	up to .23	49c
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9	2	1"	1-1/2"	3"	up to .39	59c
10	2-1/3	1-1/8"	2-1/4"	2"	up to .51	59c
11	4	1-1/8"	2-1/4"	3-1/2"	up to .65	69c
12	2-1/2	1-1/4"	1-5/8"	2"	up to .51	59c
13	3-3/4	1-1/4"	1-5/8"	3"	up to .65	69c
14	5-1/4	1-1/4"	1-5/8"	4"	up to .65	69c

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they do it officially? Hunting models in a Cub. You'd look down as you flew back and forth and there would be cars all over the place trying to follow, thinking you saw their model. The fellows who come to the Nationals with models still in boxes—kit boxes, that is. Sit in the hangar and build. All day. Half the night. All week. On the last day, they are still building! It's plain to see that the Nationals are a vacation trip, a protracted picnic for a lot of folks.

One night, boys in the hangar organized an AA speed event, flew in a corner behind the protection of a bench barricade . . . but the place never got to jumping like Olathe did the night they had Cub-powered Walker glider races. The Nationals are getting quieter every year. In the flying scale event, a B-36 with the six *Torps*. Once had five engines going. Takes three men. One to apply the power starter, another with probe contacts for quick work with the boosters, and the third with a hose, so help us, for squirting fuel through the ports of the side-mounted engines. Makes a pleasant racket when enough engines get going. On take-off, they all conked but one. Ever see a B-36 whipped on one engine?

Big rhubarb about a decree handed down by the contest board that you couldn't enter your rubber job in both Wakefield and unlimited. Gotta have two ships, said the moguls. Oh, yeah, and how about those .29 and .32 B and C gas jobs, asked the quick thinkers. Guess what happened!

Those little AA jobs not only are going to town; they have been through it in a cloud of dust. Over in payload, they've made terrific inroads into the bigger A and B combined jobs. If this keeps up, there is no telling where the trend to smaller airplanes will stop. In free flight, 283 AA jobs were entered, with A, the next bigger class, having 241. Downhill from there, with 164 in B and 135 in C. Ninety-six for ROW. In payload, the .05 tops had 127 entries, opposed to 60 in combined AB. One of the odd statistics of the meet was the Cargo Clipper deal. Thirty-eight were open class—but only nine for seniors and a paltry four in junior!

All this adds up to the conclusion that the younger chaps steer clear of the hard-to-design and handle stuff. In rubber, that's true regardless of age. The unlimited event with 107 models entered, swamped Wakefield with its 58. There were 112 towliners entered and 155 hand-launched gliders. Speed does better than you think. In B, 86 ships were entered, as opposed to the 89 total in stunt. For some contrary reason—probably because the least can be done with engines in that event—class D speed had a clear cut advantage with 76, over A at 64, and C at 61.

Who goes to the Nationals? From the reams of statistics compiled by MAN's staff at the meet, it's apparent the big meet is hardly a kid affair. Better than 52% of the models were entered in the open division. Thirty-one percent were seniors and but 17% juniors. It is easier to travel when you are older and have a job.

Planes in the News

(*Continued from page* 14)

brought to earth by an elaborate ground and air trap. The Red pilot, before he was splashed, had been able to evade the U. N. flyboys in their expensive aircraft just by flying low and slow.

If any Army people in the area said, "we told you so," they were entitled to, because almost two years ago the Army issued a requirement for the development of armament for liaison aircraft. Air Force did little or nothing about this. So the Army got tired of waiting and made some unofficial tests of its own. Machine guns, light bombs and even recoilless 75 mm. cannon were mounted on an *L-5* liaison craft. So now, the Air Force is reexamining the issue, based on the recent embarrassment in Korea.

At the same time, there is a single-engined trainer competition going on, supplementing the incompleted one started in August 1950 and broken up by the Korean turn of events. The outcome of the competition will decide which of two manufacturers—Beech and Temco—is to get the nod for some planes.

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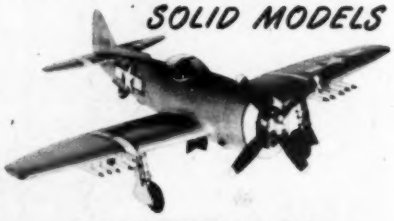

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So Beech, taking advantage of a golden opportunity, has begun a double-barreled demonstration program to sell the AF on the *T-34* as a trainer, and the Army on an armed version of the same plane as a mosquito killer.

In addition to Beech and Temco, Fletcher Aviation Corp. of Pasadena is trying to get into the killer act with the Model *FD 25 Defender*, a peculiar name for a plane whose mission is purely offensive. And Art Mooney is promoting the Mooney *Mite* for the same sort of job.

Armament of the Beech *T-34* is two .30-in. machine guns and six rockets, three under each wing. A 150-lb. bomb can be slung in place of either or both the rocket trios.

The Fletcher job is somewhat more versatile, says Fletcher. It can carry two 40-gal. Napalm bombs or two 250-lb. bombs or thirty-two 2.75-in. folding-fin rockets in launchers or forty 2.75-in. rockets in banded bundle mountings or four 5-in. HVAR rockets. In addition to all these, the plane has two .30-in. wing guns each with 2,000 rounds of ammo.

For one of the models this month, we've chosen the Beech *T-34*. It's not as attractive as the Temco *T-35 Buckaroo*, but its very unusualness would make it an interesting ship to build. And it could be control-line, freeflight, rudder, gas or scale. How about it?

The next step for Fairchild's *Packet* design, the obvious and ingenious answer to the problem of hauling freight by air, is the *C-119H*. Marked by its greatly increased wing area, the craft was designed to meet Army combat cargo requirements. These call for a plane capable of moving 22,000 lb. of cargo right up to forward staging areas for direct off-loading into trucks. This demands excellent small-field performance, a light ground footprint, and ease of unloading.

Fairchild's redesign of the *Packet* is, in some respects, a reply to Lockheed's turboprop transport which recently won an Air Force competition for planes of this type. But Lockheed's proposal has to wait for turboprops, and the *C-119H* doesn't; furthermore, the Fairchild job is, in large measure, ready to build.

Design changes include the new wing, which has a span of 148 ft., against the *C-119C's* span of 109 ft. 3 in. The increased span is accompanied by a step-up in area of about 40 percent. General lines of the plane remain the same, with geometric blow-up being the predominant characteristic. Tail surfaces are larger, nacelles and booms longer. The inverted gullwing center section of the *C* has been replaced with a straight-through section on the *H*. Cabin interior dimensions are the same.

The current Pratt & Whitney Wasp *Majors* are to be suppplanted by Wright's *R-3350-30W* compound engines which will give 3,500 hp. each for take-off, with water injection. Gross weight of the *C-119H* is estimated at 85,450 lb. The overall length is 95 ft. 8 in., and height is 31 ft. (*Continued on page* 54)

Bill Bridgeman, test pilot who flew Douglas Skyrocket on record flights, admires precise scale plastic model of the big plane. Allyn Sales.

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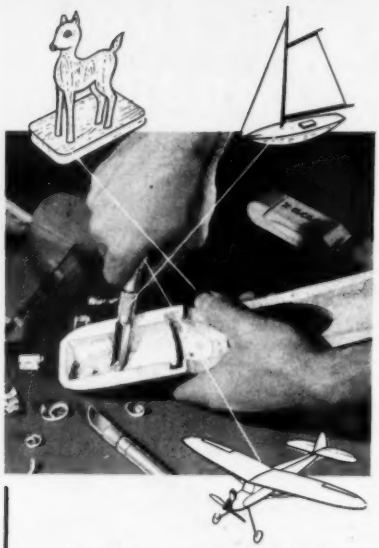

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A typical mission would call for the *C-119H* to take-off at the gross weight above, clearing a 50-ft. obstacle in 2,600 ft. The plane would climb to 10,000 ft. for cruiseout. Arriving at its 500-mi. distant terminus, the craft would land in less than 1,300 ft., offload a 27,200-lb. cargo and take-off without refueling. It would return to base, land in less than 900 ft. and still have the necessary reserve fuel on board. Current status: Fairchild has been awarded an Air Force development contract.

Next month is the official first flight date for the big *B-60*, swept-wing all-jet version of the *B-36*. This assumes that Pratt & Whitney has been able to make deliveries of its *J-57* engines in the 10,000-lb. thrust class.

This giant plane is in direct competition with Boeing's *B-52*, and both planes are vying for the *J-57* output. If there is any deciding factor in production of these babies, it will be the ability of P&W to turn out jets.

The *B-60* retains the fuselage of the *B-36*; but wings and tail surfaces are swept at the usual 35 deg. angle (wish I knew why that became the magic angle of sweepback—everybody uses it except the Russians). Horizontal tail surface is raised above the current location and given some dihedral. Four nacelles slung below the wing in *B-47* style house the eight *J-57* engines.

This plane is supposed to be another 10,000-mi., 10,000-lb. bombload machine. Speed is estimated at 550 mph. at an altitude of above 45,000 ft. Crew is 11, plus four relief.

Lockheed's *P2V-5 Neptunes* are sporting a deadly looking nose now. Formerly, the Roman-nosed *Neptunes* had enclosed fixed armament, but now a twin 20 mm. cannon turret has been installed. Of familiar fish-with-ball-in-mouth appearance, the new turret went into delivered *P2V-5s* with the U. S. Navy in April. Later production craft will also go to Australia and England.

England

● *Hawker P.1067* — The sleekest airplane to be seen for many a moon is the *P.1067*, Hawker's latest fighter for the Royal Air Force. It has been through its initial flight tests and has been ordered in quantity for the RAF right off the drawing board, as a teammate for the Supermarine Swift.

Powerplant of the *1067* is the Rolls-Royce *Avon*, 7,000-lb.-plus jet engine going into quantity production in at least six major factories in England. It has been reported that the *Avon* for the *1067* is fitted with afterburner.

Generally the plane resembles Hawker's line of postwar jet fighters; the closest relative is the swept-wing *P.1081*. But the new craft has a longer and finer fuselage than the *1081*, and the landing gear tread is somewhat larger. No dimensions are available, and the only pictures give no clue as to size. But it's beautiful, and that's what counts.

● *Avro Deltas* — The British continue to do things with delta-winged craft. Their Avro *707* series has just had a rebirth in the *707A*, blood-brother to the rest. Basic (and only apparent) difference between the *A* and the earlier *707* and *707B* is in the engine air inlets. The *A* has wing root inlets; the *707* and *B* had fuselage top inlets.

These fuselage inlets were horrible examples of what air intakes should be. They were mounted well aft of the pilot's canopy. At any angle of attack, they must have been nearly devoid of air; and at best, their efficiency must have been low.

Now the *A* has two wingroot inlets, which are, of course, the better solution to the problem of getting air on board. And the only reason they weren't located there in the first place is time—Avro wanted to get the plane into the air as soon as possible. So, in the rush of design and construction that followed, it was decided that the best compromise was to locate the inlets on the fuselage deck. There just wasn't any other place to put them.

And now that the *A* model is in the air, the current Avro advertisements show a modified *B*—modified to the extent that the fuselage duct inlet has been reworked to add a little efficiency. The inlet has been extended forward and into the airstream a little more, and a ramp has been installed to

(*Continued on page 56*)

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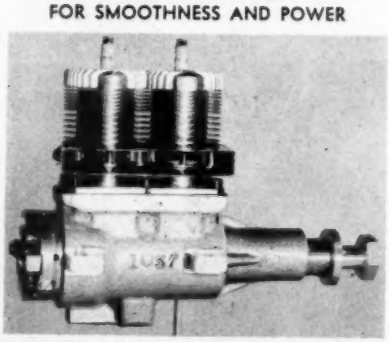

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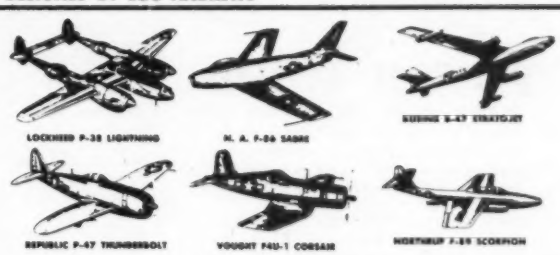

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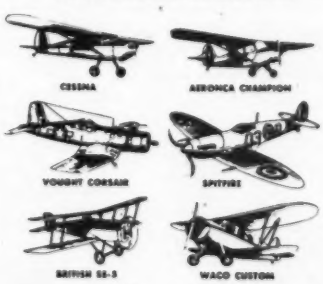

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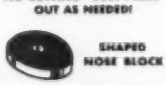

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direct the air toward the inlet and to keep it from flowing crosswise to the inlet face at high angles of attack. This means better performance for the *B*, and may provide comparative values, with the *A*, on the relative efficiency of air intakes.

Holland

● *Fokker S.14* — The first jet trainer—and second model of the month—designed from the ground up as such has just flown in Holland. The plane is Fokker's *S.14*, third of a series of student craft built by the Royal Dutch Aircraft Factories during the past two years.

Built to Royal Air Force and Royal Navy requirements, the *S.14* combines fighter feel with trainer simplicity in a clean airframe. The design is extremely conventional; about the only different feature is the extreme width of the fuselage. This dimension—nearly six ft.—is due to the use of two ejection seats side-by-side.

Powerplant for the *S.14* is the reliable Rolls-Royce *Derwent IX*, which puts out a sea-level static thrust of 3,600 lb. At 25,000 ft., the *Derwent* shoves the *S.14* along at a maximum speed of 440 mph.. high enough to be hot, and not too high for student abilities. Span of the *S.14* is 39 ft. 5 in.; length, 43 ft. 8 in.; height, 15 ft. 4 in. Gross weight is 11,250 lb., which on a wing area of 342 sq. ft. gives a low wing loading of 32.9 lb. per sq. ft.

Everytime I look at the *S.14*, all I can think of is a winged *Dyna-jet*. This layout seems to be a natural for that, or for the ducted fan publicized in October MAN. *Jetex* is also a possibility, and I've seen a picture of a solid scale exhibition model of the plane that would make you gasp. So it looks good in any form, and that's still another criterion to judge a plane by.

The Drake

(*Continued from page 28*)

Simplicity is the keynote in the *Drake*. A brief look at the photos and the plans will show how sheet balsa and strip balsa are used to yield the lines with a minimum of carving and fitting. Once you've collected the 1/16" sheet and the 3/16 x 1/4, 3/16 x 3/16, and the trailing edge stock from your local hobby dealer, you're ready to start. Enlarge the plans to full size, cut out the templates from 1/16" sheet as called for on the plans, follow the step-by-step instructions for assembling them, and in a few hours you'll be ready to test fly the *Drake*.

HULL

1. Cement 3/16" sq. braces to sides in cabin and wing mount area as shown.
2. Cement tail former to one side, then cement other side to tail former, aligning sides carefully. Let dry.
3. Insert all bulkheads, except noseblock, and cement. Pin together if necessary until dry.
4. Cement 3/16" sq. crosspieces in place at top of windshield and on bottom at step. Trim ends to fit angle at which sides are set by bulkheads.
5. Press forward part of hull sides inward and cement nose bulkhead block in place. Hold together with pins until thoroughly dry.
6. Insert 3/16 x 9/16 x 11" sponson crosspiece (made out of three pieces of 3/16" sq.) in hull sides. Make sure it is centered, then cement into place. Reinforce with gussets of 1/8" flat scrap balsa, cut to fit snugly against crosspiece and the 3/16" sq. side braces.
7. Cement dowels for windshield and wing and tail mounting rubber bands in place.
8. Cover top and bottom with 1/16" sheet, grain running croswise of hull.
9. Cut out windshield and windows from cellulose acetate and cement in place. Crease windshield slightly where it curves around dowels. This makes it easier to install.
10. Add tail platform, making sure it will hold tail surface level with the wing.
11. Add the piece of trailing edge stock on top of fuselage which serves as a wing aligning block.
12. Sand smooth. Round the corners slightly at top of hull, but keep corners sharp on the bottom.
13. Finish by covering entire hull with colored paper doped to the wood; dope the paper with four coats of thin clear dope, then fuel proof it.

SPONSON-PONTOONS

1. The two sides of each sponson-pontoon are cemented to the 3/16 sq. x 11/8 long leading edge and trailing edge braces, which are trimmed to shape shown on side view.
2. Cement the pontoons on the crosspiece. The notch at top of sides slides on crosspiece and provides the proper angle.
3. Cover top and bottom with 1/16" flat stock, wrapped completely around nose. Wet the outside of the balsa to help in curving it around nose.
4. Sand smooth, cover with paper, and dope.
5. Add 1/4 x 3/16 leading edge to crosspiece between hull and pontoon. Round to shape.
6. Add piece of trailing edge stock to rear of crosspiece between hull and pontoon. Trim crosspiece to fit trailing edge smoothly.
7. Sand the streamlined crosspiece smooth, cover and dope as on hull.

LANDING GEAR

1. This is optional for flying as landplane. Bend the wire to the shape shown, and hold main gear in place with rubber bands looped over dowels at top of hull. Gear is shock absorbing.
2. Tail skid can be permanent if desired.

WING

1. The wing is of conventional construction except for the engine mount. Build each panel flat on the table, except the tip pieces which should be sloped up to meet the spar. Trim the tip rib to fit snugly. Notching the trailing edge to receive the ribs is optional, but adds to the strength.
2. To join the left and right panels and obtain proper dihedral, block up each tip 2-1/2" from the table top, trim the bottom of the leading edges and trailing edges at the center so bottom edge of center section ribs can lie flush on table. L.E., T.E. and spar of each panel should be trimmed to proper length to butt joint at center of wing.
3. Cut two spar joining plates from 1/16" hard flat stock to fit in center section when wing is joined and dihedral blocks are in place, then cement spar center sections and plates firmly in place.
4. Cement 1/16" flat bracer across center section at L.E. and 3/16" sq. brace at trailing edge. Trim to fit.
5. Engine mount pylon can be 1/8" plywood, or three laminated pieces of 1/16" hard balsa, with grains running in different directions for strength. Shape is shown in side view (piece going into center section is shown in heavy dotted lines.)
6. Line engine pylon up, fore and aft, and cement in place. Brace thoroughly with 3/16" sq. braces running from pylon to center section ribs, and along pylon from L.E. to spar. Braces should be trimmed to snug fit, and placed so as to be well inside the wing center section after it has been covered.
7. Cover top and bottom of center section with 1/16" flat stock.
8. Shape the leading edge, sand the entire wing structure smooth, and cover with colored paper.
9. Providing a mounting wall for the engine on the pylon is a matter of individual

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taste. The author used two pieces of white pine, shaped to provide a circular mounting wall, and cemented to the pylon sides, grain running vertical. Mounting holes were drilled, and balsa fairing added to streamline the pylon. Cutouts in the balsa fairing were provided to allow access to mounting nuts.

TAIL-SURFACES

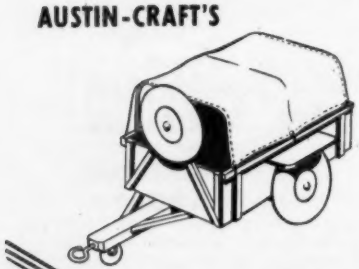
1. Build the stabilizer flat on the table in the conventional manner. Make tab from 1/16" flat stock and attach with soft wire hinges which will bend for adjustments.
2. Make rudders from 1/16" flat sheet. Put tab as shown on left rudder only.

ADJUSTING AND FLYING

1. The model should balance at the spar. Add weight to nose or tail if required. Nose weight can be 3" strips of solder, running straight back from nose block along bottom of hull. They serve also as skids when the model noses up.
2. Note the angle shown on the stabilizer tab. This is because of the high mounting on the engine. The model should be adjusted to glide with the tab setting as shown; then, under power, the propeller blast on the tab overcomes the nosing down tendency which would ordinarily occur with a high mounted engine. When the engine quits, the tab is not so effective, and a smooth transition from power flight to gliding flight results.
3. The wing and tail are held on by rubber bands. The aligning block at the trailing edge of the wing on the hull helps to keep the wing on straight. The stabilizer is aligned by setting the center ribs parallel to the edges of the tail platform. It can then be pinned in place, or dowels can be inserted in the tail former, projecting up, and holes made in the stab leading edge center brace and trailing edge to fit the dowels. This is optional.
4. The model flies equally well either to the right or to the left. Whichever direction is your preference, offset the engine thrust line slightly in the opposite direction, and use the rudder tab to get the desired turn. When flying from the water, don't try to get small circles, as they will hamper the take-off characteristics.
5. Before flying from the water, the entire model should be checked for leaks. It must be completely water tight; otherwise it will absorb water which will destroy the balance. If all joints have been properly cemented, and the paper covering goes over the whole structure, the doping and fuel proofing will also waterproof the model. To check for leaks, dunk the hull in the bathtub briefly. If bubbles appear, note where they come from, dry the hull and seal the leak with cement. Check the wing and tail also. Rough landings on the water during testing may make the model nose over, and then everything gets wet. But no harm is done if the structure is water tight.
6. Test flights with the prototype were made first with the *Infant .020* (yes, the *Infant* not only flies this 7-1/2 oz. model, but will lift it from the water) to check the adjustments, then the *Torp .035* and *.049* were successively installed. Beautiful 20 feet long take-offs with the *Infant* were replaced by snappy four foot runs with the *Torp .049*. The model flies well with any of the half A motors, but unless you have an *Infant* for moderate power tests, better run your engine a little rich at first. Dunking won't hurt the model, but sometimes the water makes the engine very balky, even though you blow the water out thoroughly and squirt in fuel following a ducking.
7. When flying as a landplane, the wheels change the balance slightly and you'll have to readjust the model. A little modeling clay added to the tail will re-establish the balance, since it will have a much longer moment arm from the balance point than the wheels.
8. The wheels are so located as to protect the pontoons from crash landings, but the position does have the slight drawback of causing the model to nose forward on the hull on some landings, then drop back on the tail skid. This is where the strip solder nose weights prove doubly useful, as they protect the hull.

Ready Now!

AUSTIN-CRAFT'S



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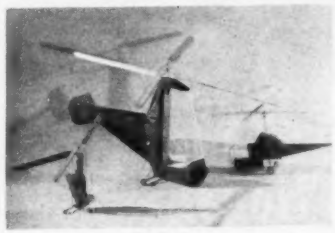

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Nieuport II

(*Continued from page 30*)

22' 6" in the lower. Respective chords were 3' 11½" and 2' 4". The upper wing had no dihedral but was set at 2 deg. 30 min. positive incidence throughout. Right lower wing panel was set at 4 deg. throughout, while the left panel was 4 deg. at the fuselage and 5 deg. at the tip to counteract torque. The lower wing was set at 3 deg. 30 min. dihedral. Both wings were swept back at an angle of 3 deg. 40 min. and were positively staggered 28 inches.

Overall length was 19 feet. Total weight of the *Nie. 11* ready to go was 1,210 lbs.; empty weight was only 759 lbs. One hundred ten pounds of the 451 lb. useful load were taken up by the machine gun and ammunition.

The Nieuport *II* fuselage was framed entirely in wood. Upper longerons were straight in elevation except at the nose, where they turned down. Lower longitudinal members were heavily curved to give the fuselage its characteristic Nieuport elevation. Vertical and horizontal connecting struts were tapered and set in steel sockets bolted around the longerons. All members were made of ash and were rectangular in cross section. Upper longerons were set slightly farther apart than the lower, except at the tail.

Fuselage sides and bottom were flat. The top, however, was rounded off aft of the cockpit by a series of plywood formers and stringers covered by thin plywood and cloth. Forward of the cockpit the upper deck was cowled in sheet aluminum attached by metal lacing. The nose finished off in a one-piece stamped aluminum cowl. The lower portion of the cowl was left open to improve cooling and prevent accumulation of engine fluids.

Powerplants fitted to the Nieuport *11* included the seven cylinder Gnome *Monosoupape* model "A" of 80 hp; the nine cylinder Le Rhone engines of equivalent power.

All engines were mounted on stamped steel bearing plates with the rear bearing, supported by a second stamped steel structure, containing the end of the shaft within the fuselage. Immediately behind the engine was a 22 litre oil tank, and behind that a gasoline tank holding 78 liters.

Cockpit of the Nieuport *11* was compact, but adequate for a six-foot tall pilot. The metal bucket seat was mounted on a plywood box, but was not adjustable. The control stick and rudder bar were mounted on a plywood floor or platform just large

Tip Hannon, left, Ed Wellington of Mel Anderson, holds $500 first prize check in Spitfire Contest. L-R Harry Balaban and Ed Kapitanoff, Western Model Distributors, acted as contest witnesses.

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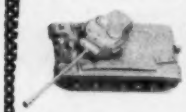

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enough for the purpose. Cockpit accessories consisted of the usual gadgets required for the operation of a rotary engine, plus an altimeter, airspeed indicator, tachometer and air pressure gauge.

Landing gear was a conventional design, but novel for its day in that an aluminum alloy was used for the struts. These were hollow and of streamlined section, attached to the lower longerons by means of a steel stamped fitting secured by a steel pin. Lower extremities were attached on each side by stamped steel plates and although the axle was steel, the spreader bar covering was again made of an aluminum alloy. Rubber cord was used to absorb shock. The tail skid was rigidly attached to the fuselage and consisted of a small plywood fin and an extending arm. Shock was taken up by a length of spring steel at the end of the arm which also served as the skid shoe.

The characteristic Nieuport rudder was carried into the design from the Nieuport monoplane. It was equipped with a very small balancing portion ahead of the hinge line, and was flat in airfoil section. Horizontal tail surfaces consisted of a conventional stabilizer and split trailing edge elevator. The former was simply bolted across the upper longerons and braced by a short steel tube strut on each side attached to the lower longerons. Tail surface frames were a combination of wood and aluminum tubing.

The lower wing was constructed in right- and left-hand panels, each with a single spar of "I" section. Leading and trailing edges were wood. Ribs were made of thin three-ply cut out for lightness, held in place with tacks, small wood blocks and glue, then capstripped with strips of spruce. The lower wings were attached to a steel tube running across the lower longerons and which had half of the pin fitting brazed to each end. Inner wing spar ends were fitted with a ferrule to which was welded the other half of the fitting. The tapered steel pin which held the wing to the fuselage was cottered.

The upper wing was built in one piece, with two spars of "I" section carrying the ribs, leading and trailing edges. The front spar was exceedingly close to the leading edge and was widely separated from the rear spar. The latter provided anchorage for aileron hinges.

Aileron control was a series of rigid steel tubes. A rocking arm on the stick had at each end a vertical tube connected to a bell crank. The crank, in turn, rotated a spanwise tube, located immediately aft of the rear main spar, to which the ailerons were attached.

The upper wing was held off the fuselage by four streamlined wood struts bolted to fittings on the upper longerons. The forward struts were perpendicular when viewed from the front, but the rear struts formed an inverted "V", with the point carrying attachment fittings. The right-hand rear strut carried a rear view mirror as standard equipment. The photographs accompanying this article show the prototype *Nie. 11* in which the rear struts were made in the form of a bow.

Interplane rigging consisted of two flying and two landing wires on each side. Both forward flying and landing wires were 3 mm. diameter stranded cable, while the rear wires were 4 mm. in diameter.

For an 80 hp biplane of its period, the *Nie. 11* possessed a fairly respectable performance. Top speed at sea level was 97 mph. Climb to 1,500 ft. altitude required 2 min. 35 sec.; it reached 3,300 ft. in 5 min.; 6,600 ft. in 11 min.; 9,900 ft. in 18 min. and its ceiling of approximately 15,000 ft. in 41 min. Total air endurance was two hours maximum.

The Nieuport *11* took off after a run of about 100 ft. in still air, landed at 30 mph with a ground run of only 75 to 100 ft. depending on the surface. The tail skid was so shaped that it actually dug into the ground and provided an effective braking force.

Flight characteristics of the *Nie.* were far from what you could call perfect. At low speeds all controls lost their best effectiveness, particularly the rudder. At normal operational speeds the ship was quite sensitive, and required attention constantly. It was not a "hands-off" plane by any means. Lateral control was good and the rudder was quite effective. The elevators, however,

were very effective and the ship responded instantly to fore and aft stick movement. At normal speeds, the *Nie. 11* was very maneuverable, and was light on the controls. It stalled rather violently, spun easily but recovered quickly. The main difficulty with the ship was its lack of stability. Withal it was an enjoyable plane to fly and made many friends among Allied pilots.

One of the most famous squadrons to make good use of the Nieuport *11* was the renowned *Lafayette Escadrille*, officially designated as N. 125. This French Squadron was made up of American volunteers, and was activated April 16, 1916. At that time, the *Nie. 11* was the standard single seat fighter of the French Air Service. It was used for four months by the *Lafayette* until August 1916, at which time the Nieuport *17* replaced it.

The remarkable exploits of the pilots of the *Lafayette Escadrille* were due in part to the good qualities of the Nieuport *11*. As a fighting machine it was crude to begin with and soon became inadequate, but when France needed a single seat pursuit to combat the Fokker monoplanes it was ready—and it helped turn the tide of German aerial supremacy.

Prefabrication

(*Continued from page 38*)

consistent winner. That would do the beginners no good whatever and it wouldn't prove anything about the experts. Even disregarding what this trend can do to the contest picture, there are many other faults to be found in prefabrication.

Because of the oversimplification of these prefab jobs, there is a strong tendency for the beginner to start on something that is really beyond his flying ability. Then, should the results be failure, the tyro modeler is discouraged and very likely goes no further in the hobby. Even here the old adage is true: "One must walk before he can run."

There have been many good beginners' models published by magazines and beginners' programs sponsored by clubs and other organizations. These programs should be followed by the novice if he wishes to become proficient in the hobby. Prefabrication brings a feeling that all the work is done for the modeler. Thus, the new modeler (and some of the older fellows who really ought to know better) does not pay enough attention to good construction practice. The beginner never does learn basic construction methods, techniques and all the little handy tricks that one learns by really *building* a model. The kit designer may sometimes forget good structural practice in the interest of oversimplification for easy prefabrication.

Excess weight and reduced performance can result from extra large chunks of balsa being used for "superior" strength, when the strength weight ratio is really the important consideration. Overweight models can result because the inexperienced builder does not realize that he should remove much of the wood from many such pieces.

If die cut parts are not sufficiently sanded to a degree of smoothness, in some cases they lose their proper contour. This of course destroys the accuracy of airfoil sections in particular and cuts down outline parts.

The result of such prefabrication can be bad in that the flight characteristics of the kit model are frequently different from those of the original test models.

Because of current prefabrication methods, kit designs are too inflexible. They prevent modification and experimentation toward improved performance by capable builders. These fellows then turn elsewhere for basic model designs, and do not get the proper advantages of models presented in kit form. One of the most intriguing aspects of the hobby is all but eliminated in the construction of these prefabricated models. The individual modeler's ingenuity is hardly challenged by the "glue rib A to spar B" type of assembly.

Our favorite hobby is one which has always paid off for skill in designing, building and adjusting. The world's best and most respected modelers are not the ones who use prefabrication. Try to imagine a prefabricated indoor job. Silly, isn't it? The Wake-

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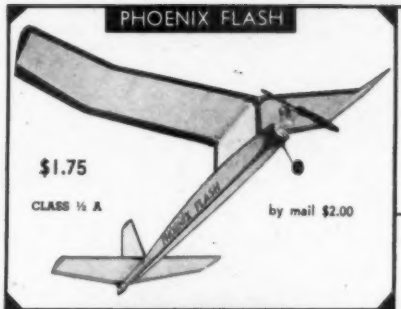

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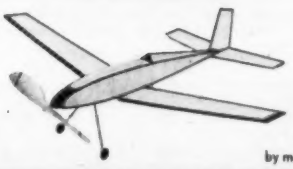

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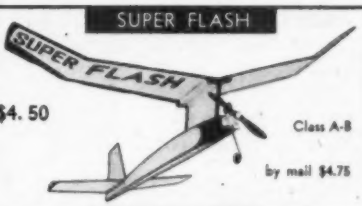

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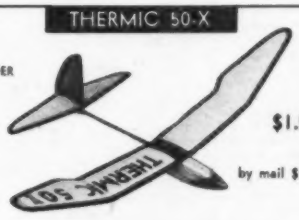

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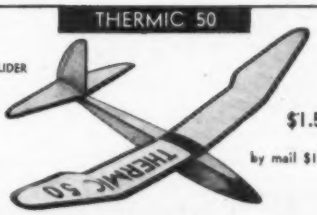

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field rules state that the modeler must build everything except mechanical timers or gears if they are used. And this is as it should be!

The arguments given above apply to tyro and expert alike; they apply whether the builder intends to sport-fly or compete in contests; they concern all types of controline models and free flight jobs.

If you surmised that the writer does not like prefabrication, you were right the first time! Let's keep the *building* in model building.

The Scrap Box

(*Continued from page 9*)

at the Los Angeles Hobby Show, is one example of the experimental designs worked out. This squirt racer had an 85 sq. in. wing, weighed nine ounces, averaged 45 mph on a run of 116 laps, all on 1/2 ounce of fuel.

Here's the scoop on the new AA Team Racing Rules: 1. Minimum wing area of 75 sq. in.; 2. Maximum engine displacement of .05 cubic inches; 3. Maximum tank capacity of 1/2 fluid ounce (.90 cu. in.); 4. Minimum cross section at cockpit of 1-1/4" x 2-1/2"; 5. No engine cut-off required; 6. Realistic design, fully cowled engine, and fixed landing gear; 7. Line length 26' 3". Suggested races are one mile (32 laps), two miles (64 laps), and five miles (160 laps). The suggested contest set-up: Hand release two, three,or four models in a series of short heat races; winners to fly in the five mile main event. Much thought and design preparation has been made by the F.A.S.T. boys to promote the best type of AA type Team Races and this type of flying should catch on in a big way.

• • •

Warren Roberts and H. Jex of the Tech Model Aircrafters of Massachusetts, wrote a very timely letter to Carl Wheeley of the Academy. Topic of the discussion was the Flying Scale Models. We'd like to give you readers a resume of the facts and observations therein stated. I. With compact AA engines plentiful, rubber-power flying scale is losing popularity. 2. Duration is an unsatisfactory criterion for judging the flying qualities of a machine intended for load carrying. 3. There is more spectator *and* modeler interest in watching flying scale models than most other types. (This we know from first hand experience with all types in public demonstrations.) 3. Judging the appearance is a difficulty which has hindered popularity of events for this type. It is proposed that we try an AA Flying Scale event with flying judged by the PAA clipper method—one point per ounce dead weight carried for 40 seconds on a twenty-second engine run. Appearance would be judged on only the three models having highest flying points. Two methods could be used, the ideal way being for an experienced and unbiased man to rate the models on "how much it looks like the real airplane." Such people are hard to find so an objective method is suggested. First, the A.M.A. should establish a standard of quality for scale kit plans and would "certify" plans according to scale outline, scale structure, and external detail shown. A builder of a non-kit model would have to show at least a photostat of the source plan, preferably from the manufacturer or an approved areonautical periodical such as *Janes' All the World's Aircraft*. Award points as follows to top *three* of flight trials *after* flying. *Flying*—one point per ounce carried (to nearest 1/2 ounce. Scale outlines, one point; scale position of main structural members (spars, ribs, stringers, struts, etc.); one point scale color scheme and control outlines. Bonus for workmanship and detail (excellent—three, good —two, fair—one point; total—three points). The aim is to encourage *flying* but recognize accuracy of *scale* as important. Such a flying scale set-up would probably result in: an interest in *flying* scale models; an easy-to-fly pattern (no tricky turn problems or overpowering); enough luck element to keep it interesting; a variety of designs from juggling of biplane area advantage over simplicity of monoplanes, and simpler "brutes" over cleaner streamliners; delighted kit manufacturers who recognize appeal of flying scale models; and last but far from least, increased spectator and press interest making sponsorship of the event worthwhile.

Sounds like several good ideas were worked up in this analysis of the scale model situation. We definitely agree that John Q. Public shows plenty of interest whenever scale models are exhibited. The thought of building a super scale job undoubtedly floats around in the back of all modelers' minds at one time or another. Sounds like Warren Roberts and H. Jex have worked up a good scheme for perking up the flying scale event. Let's get going and thrash out a good compromise.

• • •

The Sixth Annual All-Western Open Model Aircraft Meet will get under way on October 13th and 14th at the Los Angeles International Airport. This meet will be sponsored by the L.A. Jr. Chamber of Commerce. This year's meet, the largest of its kind on the West Coast, will be held in conjunction with the annual Air Transportation Day celebration at the airport, according to Chairman Bill Gimbell. Competition will include indoor rubber, stick and cabin combined; indoor glider, hand-launched; control line, speed, all classes combined; control line, speed, jet; control line, acrobatics, all classes combined; outdoor glider, hand launched; outdoor towline glider, hand-launched; freeflight, gas, all classes combined and freeflight, rubber, stick, and cabin combined. Entry blanks and contest rules can be secured by addressing the Los Angeles Junior Chamber of Commerce, 1151 S. Broadway, Los Angeles 15, Calif. The All Western Open has always gathered the boys and gals from the wide open spaces. This big contest is actually a Western States event.

• • •

Bob Palmer, one of the top stunt men out west and formerly connected with Veco, manufacturers of that sharp line of stunt ships—*Chiefs, Braves, Warriors*, etc.,—now working in the model department of Lockheed Aircraft. Good luck on your new assignment, Bob.

• • •

We've had quite a few inquiries about dying silk for models. The process is very simple. We usually follow a stock formula that has always worked very well. Get enough silk for the model so it can all be dyed at the same time. Use some standard brand of dye such as Rit or Tintex, making sure it is recommended for silk. Half fill a one lb. coffee can or some such container with hot water (not boiling) and put in your dye. Stir well and be sure the dye dissolves thoroughly. Partially fill a bucket with warm water (amount of water will vary with the square feet of material to be used.) Pour the dissolved dye through a sugar sack or similar material allowing it to run into the larger container of warm water. Squeeze all of the dye possible into the water and mix it in. Wet the silk to be used thoroughly in clear water. Immerse it into the dye water and keep pushing it under the water with a smooth object that will not snag the silk. Try to keep out as many folds in the material as possible while dying so it will dye evenly. Every few minutes look at the silk to see if it is getting near the shade you want. Remember it will dry out lighter. When you get the desired shade, take out the silk and put it into a container of clear water and rinse lightly. Gently squeeze out the excess water and carefully hang it to dry. You'll get a beautiful and light covering to which you can add a paint trim that will dress up your model in true conest style.

• • •

** The ten Southern California winners joined the top model flyers from the Northern California elimination meet, to represent California at the Fifth International Model Plane Contest in Detroit. These 20 youngsters traveled by special Santa Fe railroad car to and from Detroit. There was an extra baggage car to carry the delicate model craft. The versatile lads competed with the world's top model builders for international honors, hundreds of prizes and trophies, and $4,725 in U. S. Defense bonds. END.

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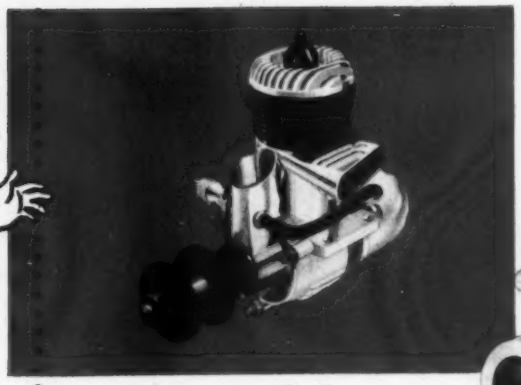

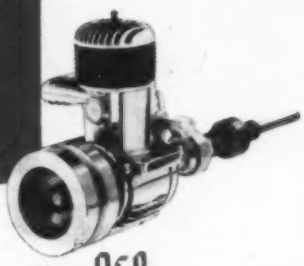

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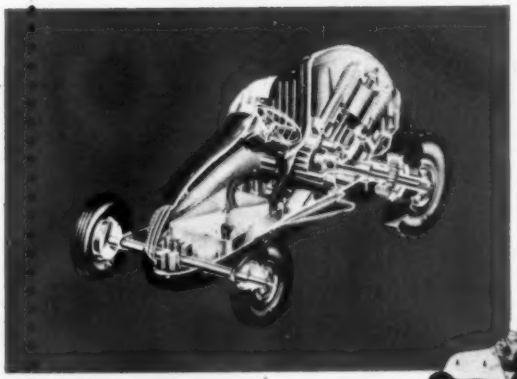

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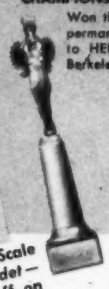

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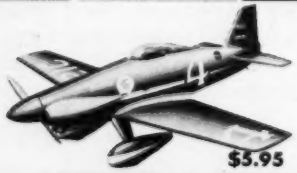

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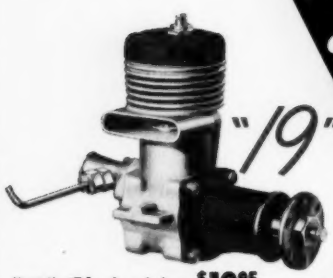

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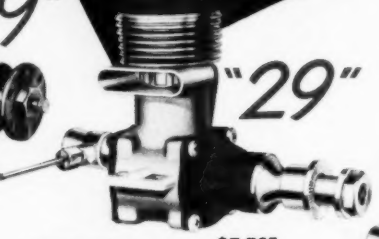

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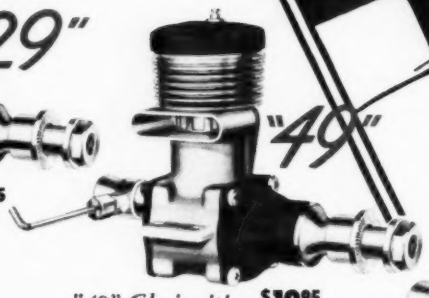

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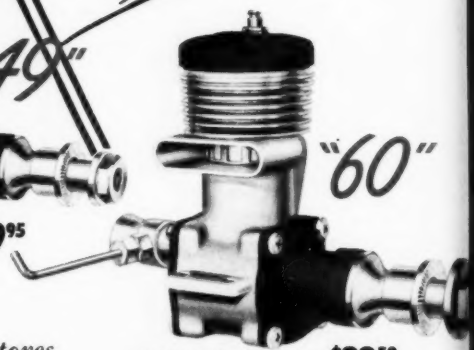

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